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ABSTRACT

This volume and its companion offer an update and elaboration of information presented in the 1972 Report of the Surgeon General's Advisory Committee on Television and Behavior. This volume largely incorporates edited versions of commissioned integrative reviews of the scientific literature of the past decade which were used in the formulation of the update, together with introductory comments for each topic area. The 24 papers presented address such issues as cognitive and affective aspects of television viewing; violence and aggression; social beliefs and social behavior; television in social relations; television and health; and television in American society. Although much of the research has been conducted with child and adolescent subjects, the new report is not limited to influences of the medium on this age group. Within this broadened context, the orientation of the report is to elucidate research findings and their implications for public health and future research. Individual papers include data tables and reference lists. (LMM)

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Television and Behavior

Ten Years of Scientific Progress and Implications for the Eighties

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Volume II

Technical Reviews

Edited by

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
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Foreword

This volume and its companion (volume I) offer an update and elaboration of information presented in the 1972 Report of the Surgeon General's Advisory Committee on Television and Behavior. That report was based, in large part, on the findings of research projects commissioned and funded by the Federal Government to assess the effects of televised violence on children and youth. The Committee's report confirmed the pervasiveness of television within the United States but noted the conspicuous paucity of information about the relationship of television viewing to the psychological growth and development of children. In a strongly worded statement, the Committee called for the conduct of such research.

The past decade bears witness to the response of the scientific community to that call. Approximately 90 percent of all research publications on television's influences on behavior have appeared within the past 10 years—more than 2,500 titles. While a large number of the studies continued to focus on effects of the medium on aggression, many more dealt with television viewing and its influences on other aspects of development and behavior. This massive research effort, undertaken in this country and abroad, under the sponsorship of a wide variety of research and funding organizations, yielded an enormous amount of new and needed information, the significance of which was to an extent hindered by lack of synthesis and assessment.

In early 1979, a group of researchers in the field suggested to then Surgeon General Julius B. Richmond the growing need for collection, review, synthesis, and assessment of the new literature on television and behavior. The Surgeon General agreed that such an effort would provide opportunity to be more definitive regarding television's causal influences on violent and aggressive behaviors of viewers as well as to address an increasing number of questions about the medium's impact on viewers' functioning.

Because the National Institute of Mental Health had exercised lead responsibility within the Public Health Service for more than a decade for research in this area, the Institute was encouraged by the Surgeon General to undertake the project, and work began in late 1979. Dr. David Pearl, Chief, Behavioral Sciences Research Branch, Division of Extramural Research Programs, was assigned lead responsibility within NIMH for the review project. The reader is directed to the Preface of this volume for a detailed description of the process through which the review was managed and conducted.

Several decisions were made early that significantly influenced the nature of the present report. First, in recognition of the large body of existing research literature, it was decided that new studies would not be funded and conducted specifically for the report; rather, comprehensive and integrative reviews of the existing literature would be commissioned to present the state-of-the-art in coherent and unified form. Second, a decision was made to focus on a much broader spectrum of television and behavior than did the earlier report which had been restricted to the effects of televised violence on aggressive behavior among children and youth. Thus, the new report addresses such issues as cognitive and emotional aspects of television viewing; television as it relates to socialization and viewers' conceptions of social reality; television's influences on physical and mental health; and television as an American institution. Also, though much of the research has been conducted with child and adolescent subjects, the new report is not limited to influences of the medium on this age group. Within this broadened context, the orientation of the report overall is to research and public health issues.

While the coverage of the report has been broadened substantially, certain topics, generally not included, should be noted. Television news and news reporting, political socialization, public affairs broadcasting, and television advertising either have been considered in detail elsewhere in recent years or were judged inappropriate for this project. Thus the programmatic focus of this review is on entertainment television—the kinds of programs watched by most of the audience, most of the time.

Television and Behavior: Ten Years of Scientific Progress and Implications for the Eighties (Volumes I and II) intends primarily to elucidate research findings and their implications for public health and future research. Though the subject is relevant to public policy issues, the present work makes no recommendations and does not issue specific prescriptions. We would anticipate, however, that persons bearing responsibility for policy and for television industry practices would be interested in the findings for use in decision-making. Also the report should be of substantial help to parents and others who seek to know of both the positive and adverse effects of the medium and of the ways in which they can influence them.

Herbert Pardes, M.D.
Director
National Institute of Mental Health

Preface

This is a companion volume to the National Institute of Mental Health (NIMH) update of the well-known report of the Surgeon General's Scientific Advisory Committee on Television and Social Behavior. This volume largely incorporates edited versions of commissioned integrative reviews of the scientific literature of the past decade which were used in the formulation of the update.

Seven consultants provided continuing advice and worked together with the staff as an update group on the development of the new report and this volume. They included child development researchers, behavioral scientists, mental health experts, and communication media specialists. The following advisors made a major contribution to the update project:

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The above advisory group played a key part in the entire process. An early decision had been that the goals of the project could best be accomplished by largely relying on reviews which would integrate the research literature of the past decade on television's effects or influences on behavior. Decisions on areas to be covered and on scientists to prepare reviews in these areas were based on recommendations of the consultant group. The consultants also attended meetings to discuss issues and to consider draft papers that had been submitted. They commented on and prepared critiques of early versions of the NIMH summary report (Volume I). And they wrote introductory comments for the various sections of this volume which incorporate related scientific literature review papers.

Overall, comprehensive and critical syntheses of the scientific literature were obtained on specific topics from 24 of the most knowledgeable researchers in this area. The NIMH staff and consultants provided comments and suggestions to the authors for revisions, especially reductions in length. Although the update group assumed an editorial function in regard to the clarity and soundness of the reviews, it did not impose its opinions, values, or views on the authors. The reviews thus are a product of the authors and represent their own surveys of the scientific literature as well as their own thoughts and evaluations. Moreover, no effort was made to rewrite these separate reviews into a similar style of writing and presentation, aside from editing for consistency of reference citations, etc.

These reviews are organized in this volume into a number of sections. Both these papers and the sectional introductory comments written by the update consultant group give a strategic appraisal of what is known as well as the gaps in our knowledge. They provide sophisticated discussions of conceptual frameworks employed or needed in such research and also attend to methodological problems and issues. This volume furnishes the detailed backup for the integrated update (Volume I) and therefore may be of interest to readers of that report. It especially should be useful to those engaged in research on human development and behavior, to educators, to communication media experts, and to members of professions concerned with a range of human problems.

Lorraine Bouthilet, Ph.D., formerly on the staff of the NIMH, assisted in the editing and Joyce B. Lazar, Acting Director of the NIMH Research Advisory Group, assisted in the planning and in the staff-consultant assessments of the commissioned syntheses of the scientific literature.

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COGNITIVE AND AFFECTIVE ASPECTS OF TELEVISION

Introductory Comments

Jerome L. Singer
Yale University

Growing Up in a Television Environment

A major advance in the research approaches to television in the 1970s has been reflected in the increasing recognition that this medium must be understood more broadly in relation to the natural cognitive and affective development of the growing child. In view of the evidence that children are already attentive to the television medium by the age of 6 to 9 months (Hollenbeck & Slaby 1979), it is no longer useful to talk of the television set as an extraneous and occasional intruder into the life of a child. Rather, we must recognize that children are growing up in an environment in which they must learn to organize experiences and emotional responses not only in relationship to the physical and social environment of the home but also in relation to the omnipresent 21-inch screen that talks, sings, dances, and encourages the desire for toys, candies, and breakfast foods.

It is increasingly clear that children as they grow up must learn not only to decode the verbal utterances of parents and friends or to establish schema for the meanings of the smiles and frowns of adults around them, but must learn also the special codes of the television medium, its smaller than life frame, its appearances and disappearances of characters, intrusions of irrelevant commercials to otherwise engrossing story material, meanings of zooms, fade-outs, miraculous superhero leaps, and flashbacks. As children are clearly spending more time watching television than, in most cases, engaging in conversation with adults or siblings, and certainly more time than they will spend in school, what happens to their cognitive growth? To what extent are the structural properties of the television medium likely to be influencing the way new information from other environments is processed? Is perhaps the very nature of thinking itself modified by the much heavier component of visual stimulation that characterizes regular television viewing in comparison with reading?

Implications of New Developments in Cognitive and Affective Research

The literature reviews in the following section demonstrate that psychologists and other behavioral scientists are beginning to address some of these inevitable questions about the medium. Before considering some of the specific implications of their comments, it may be useful to look at the television medium from the standpoint of the major paradigm shift in psychology that has characterized the decades since 1960 when the stimulus-response models of learning and memory began to give way to the broader gauged cognitive orientation.

Today, psychology regards the human being as playing an active and selective role in how he or she approaches each new environment. There is much greater emphasis on the fact that individuals bring to each environment preestablished schema or what might be called "preparatory plans," based, of course, on previous experience as well as fantasized anticipations about what may be expected in a situation. These schema have been built up over dozens of previous interactions with the environment, on the basis of other kinds of learning experience. Some of our schema are more complex, more integrated or organized and differentiated than others.

The various schema we have stored and organized in our brain also are in part dependent on the developmental stage we are at in life. Children in general have been exposed to far less information than adults. In addition, they lack certain kinds of organizing and interpretive skills. When they are very young, it takes them longer to grasp certain kinds of concepts. Indeed, there are some types of notions that they cannot make sense of at all before they have reached certain age levels. Much of the impressive career of Jean Piaget was devoted to explicating the developmental stages of the cognitive capacities of children and to showing how certain notions of time, space, or morality are beyond their grasp before certain levels of development. Research on reading or on television viewing, as we shall see, makes it clear that it is not only limitations in vocabulary that impede children of preschool age from grasping materials that may be presented. They simply lack the fundamental integrative capacity to put together certain kinds of information into meaningful groupings that are obvious to older children or adults.

Another major contribution of cognitive psychology has been the recognition that each person brings to a new situation a complex set of plans, private images, and anticipations. And indeed this is one of the major ways in which we manage to avoid being completely bombarded by the tremendous range of stimulation available. These plans or images are not only specific to situations but involve strategies of search and selection related to the kind of information or the kind of emotional setting one anticipates being in.

Here is where we see a close tie between emotional development and information processing. When our strategies for processing and more specific anticipations work out well in a new setting, we generally experience positive affect, joy, and a smiling response or a general sense of well-being (Tomkins 1962, 1963; Izard 1977). If, however, our anticipatory images or plans for processing information are inadequate, we may experience negative emotions. At probably a very early age, the average child learns that a major difference between the adults on the television set and his parents or other "grownups" is that the television set doesn't answer back to questions. It also deals with material generally unrelated to the child's immediate environment. Imagine the terror of a child if indeed one of the characters on television were suddenly to call out one's name or address the viewer directly!

In American television, the attempt is made to build up the viewers' anticipations through excitement, violence, and chases so that the viewer will be looking forward to the next event or outcome of some action or comedy sequence. At this point, one is generally interrupted with the presentation of a commercial. Presumably, since anticipation has led one to be glued to the set, the attention will be maintained for whatever commercial then appears, and the message of the commercial should come across effectively to at least some segment of the audience.

The producers' approach presupposes that viewers will not have developed an alternative private strategy for television viewing, based on their years of experience of being interrupted. Actually, many people simply get up and go to the bathroom or get some food or look down at some reading material they have in their laps whenever the commercials come on. Adults have often learned simply to tune out the commercials mentally. The advertisers, of course, count on the fact that not everyone will have developed such strategies, and therefore they will get at least some fraction of the vast audience who will carefully attend to the commercial message presented. Children, especially in the preschool and early elementary school ages, often do not have such discriminating strategies; they respond with equal or even greater attention to commercial interruptions.

Another characteristic of the ongoing cognitive process is the significance of reflection. It is very likely that we experience relatively few really "blank" periods in ongoing thought. Even as we process new information from the environment, we tend to reverberate it briefly in various kinds of short-term memory, and we also begin in the course of such "instant replay" to start a process of labeling events for later recall or assigning events to particular verbal or imagery categories. Our ongoing thought and even our daydreams may play an important role in how we organize information and how we begin to set up new plans and anticipations for our future behaviors. In the course of such continuous mental activity, we are clearly also laying the groundwork for carrying out our major motives and values. We are creating intentions that have decisionmaking and action implications.

Some Problems Posed by the Structural Characteristics of Television

To what extent does the sheer proliferation of information provided on the television set interfere with some of this reflective thought which is necessary for the development of longer term intentions and action sequences? This issue needs to be more extensively addressed than it has been as yet, even in the literature to be presented here. It may well be that the very rapid form of presentation characterizing American television, in which novelty piles upon novelty in short sequences, may be counterproductive to organized and effective learning sequences. The younger child who has not yet developed strategies for "tuning out" irrelevancies may be especially vulnerable in this respect, and even programs that seek to be informative as well as entertaining may often miss the mark because they allow little time for reflection. The data brought together by Collins, by Rice, Huston, and Wright, and by Singer, all provide some indications that the pacing of television programing geared for children may require more serious attention than has hitherto been recognized.

The question of pacing and of structural properties of the medium goes beyond information processing. As suggested above, the close tie between cognition and emotion has been increasingly recognized by research investigators. Extremely rapid-paced material that presents much novelty along with higher levels of sound, fast movement, intercutting, etc. may generate surprise and confusion in a viewer whose anticipatory strategies or well-established schema are not yet prepared for coping with this material. Indeed, foreigners, used to a much slower pace of television, report that they become almost physically pained when they first observe American commercial television. In the case of children, there are indications in the studies cited by Rice et al., by Zillmann, and by Dorr that hyperactive and aggressive behavior by children may be a reflection not only of imitation of specific aggressive responses but also of the sheer arousal produced by certain types of programing or commercial presentation. Naturalistic field studies carried out by Singer and Singer (1980*a,b;* 1981) yielded indications that children who were heavy viewers of the more frenetic types of programing, such as the *Gong Show* and (for young children) even the rapid-paced *Sesame Street*, showed more tendencies toward aggressive behavior in a daycare setting.

It is also increasingly clear that there are highly differentiated emotions that characterize the human being; these range from startle and surprise, fear-terror, through anger, sadness, distress, and shame as well as joy and excitement. To what extent are children being socialized by constant viewing of television toward experiencing a full range of emotions and toward identifying appropriate settings for the experience of emotions? Or, can it be argued that, in a sense, such extensive exposure, especially to events such as violence, may be neutralizing the appropriateness of emotion at an early age? We have as yet unsatisfactory answers to some of these questions, but it is clear that research is increasingly addressing it.

So far, emphasis has been placed on the most basic aspects of the cognitive and affective development of the child—questions of *attention, sequencing, arousal,* and *reflection*. There may be, at a more molar level, other important issues to be addressed with respect to the medium. To what extent is more general consciousness and imaginative capacity influenced by the fact that television is predominantly a visual medium? For young children, recognizable words and phrases or music and sound effects cues may serve to direct their attention to the screen (see the papers by Anderson and collaborators cited in the Collins review). Television, in contrast to radio and reading as forms of communication, emphasizes our most significant modality, the visual. We also know that there are at least two major kinds of coding systems through which the brain operates, a verbal-linguistic and perhaps more action-oriented processing system linked especially to the left hemisphere of the brain, and a more receptive, global, spatially oriented or imagery-focused system linked to the right half of the brain. Is television maximizing reliance on one as against the other as a habitual form of thinking?

So far no adequate evidence has been adduced to support this view, despite much passionate belief in popular literature. Nevertheless, it remains possible that, by providing extensively prepackaged visual "fantasy" material, the television medium is precluding sufficient opportunities for practicing of imaginative skills by young children and may make it more difficult for them to make the shift from such a medium to filling in the gaps within purely verbal presentations such as teachers' lectures or in helping with more complicated decoding and encoding processes involved in reading. At the very least it is clear that children watching 3 to 4 hours a night of television are simply less likely to be practicing the significant skills of reading in their early school years. On the other hand, it might be argued that, for a significant segment of the population representing the socially and educationally disadvantaged groups, travel and reading experience prior to the era of television might have been so limited that the availability of world knowledge through television enhances general information capacities. Perhaps it may even stimulate interest in reading and education. As we shall see, some of these issues are only beginning to be addressed in the available literature, as the review by Morgan and Gross suggests.

Finally, in recognition of the importance of the television medium as part of a child's growing-up experience, it is finally accepted that children need to learn something about how to watch television and how to understand the *medium*. Much as we teach them to appreciate literature, to read the newspapers carefully, and so on, we need to prepare them to understand the television in their homes. The emergence of the field of critical television-viewing skills is essentially in its infancy but reflects the general trend of this overall movement toward setting the medium in place as part of an overall system of cognitive and emotional development.

Some Specific Implications of Recent Research

The examination by Collins of cognitive characteristics of television viewing by children makes the extremely important step beyond programmatic calls for attention to the cognitive processes (Singer 1980) toward a systematic review of the available information. It moves from predominantly experimental studies on the factors of attention, segment comprehensibility, broader comprehension of programs, attention to relevant material through deeper grasp of causality and inference. Some of the ingenious work of Anderson and his group cited here confirms the fact that at early ages children already demonstrate some attentional strategies. Increasingly sophisticated methodological procedures are available for studying sequences of viewing by children in relation to developing emphasis on visual versus auditory cues, different degrees of familiarity, and potential comprehensibility. What is perhaps not addressed yet in this research is the question raised earlier concerning the more general reflectiveness of the child, even when not directly engaged in viewing the screen. What is the likelihood that material attended to will be well retained if it is not supported by either further reflection or by comprehensible auditory material?

Collins calls special attention to the important issue of whether children are beginning to learn "scripts," that is, details derived from experience on how to fill in the missing "terms" in materials which are rendered pictorially with many gaps in sequence and which involve certain conventions or codes in the sort of storytelling that goes on on television. Indeed, developmental differences are especially striking here, and even further research is urgent, particularly if one hopes eventually to see television not just as entertainment but also as a potential source of significant learning for children.

Collins also raises some serious questions for the industry, not only by pointing out the necessity for attention to age-specific capacities of the child but also in noticing that the pattern of American commercial television, characterized by interruption, often leads younger television viewers to focus only on acts of aggression without being able to be aware of possible cause-effect sequences. Young children miss the implications of the aggression within the storyline, recalling only the acts themselves. Collins' own research and the other work he summarizes emphasize that programing for children should pay special attention to the cognitive limitations of children in grasping cause-effect relationships.

The review by Rice, Huston, and Wright moves a step further by focusing even more specifically on the special structure of properties of the medium, particular facets of pacing, zooming, cluttering, loudness, and some of the conventions of the medium which the child must learn to decode, e.g., the meaning of fades from one locale to another, of closeups versus long shots, of flashbacks presumed to represent memories and thinking. An increasing area of research in child development has been on what is called "metacognition." We are increasingly aware that children have to learn that people think and to identify their own thoughts, much as they learn about the external environment. In this sense, children at earlier ages have a problem in following and decoding intended suggestions that characters on television are "lost" in thought or memory.

These authors propose interesting and suggestive models for studying the relationship between familiarization, novelty, and complexity of material. These models can serve as a basis for examining the likelihood that children at various ages will be capable of decoding television conventions, maintaining interest in a plot, and ultimately showing adequate comprehension of increasingly inferential material. The authors' work also calls attention to the specific effect that television may have on children when it provides material that is comprehensible only in certain of its elements, e.g., the aggression or liveliness of activity, and not in some of its other broad features. The possible arousal effect of rapid and loud material and the possible implications of this arousal for the child's subsequent behavior are identified. Children may overfocus on violent content which is relatively easily comprehended. They can become sufficiently aroused by loud noise and music to translate such arousal into one of the few obvious responses available to a child—an aggressive act. Thus, some of the attention-getting devices widely used on television put children at risk of increased hyperactivity or aggression, even when specific violent content is not shown.

In general, the review of Rice et al. again suggests that producers of television shows, whether for educational or entertainment purposes, are going to have to pay more careful attention to the decoding capacity of the children and to the paces of messages. For example, the review brings out rather clearly the fact that certain of the programs on public television, *Mister Rogers' Neighborhood* and *Electric Company*, for example, are characterized by more moderate pacing, more mutual reinforcement of verbal and auditory material presented at a pace allowing for some degree of reflective attention by the child.

The implications of these studies are carried a step further by Singer who details, first of all, the importance of reflective thought and imaginative play as part of the growth process of a child. The issues of the possible enhancement as well as interference of the child's imaginative capacities are addressed here along with questions of the ways in which, inevitably, television is likely to distort awareness of reality through its heavy emphasis on fictional treatment, magical effects for children, etc. Finally, an approach to intervention or mediation by adults is described on the basis of research and intervention efforts underway at various places in the country. On the whole, the evidence cited here argues against any general positive impact of television on the imaginative capacities of children. The data reviewed suggest instead that children more heavily oriented toward television viewing are also less likely to be imaginative.

On the other hand, there are suggestions from the studies that children already predisposed to imagination may be somewhat less susceptible to direct imitative behavior of violence on television and may in general be less "hooked" on the medium. Results cited here, as well as the findings reported by Huesmann in the large project carried out at the University of Illinois at Chicago Circle, point up the importance of parental influences through storytelling and encouragement of imaginative play. Such mediation by adults may be mitigating factors leading to reduced likelihood of aggressive behavior by those children exposed to heavy television viewing and especially to viewing of action-adventure programing.

Singer's review also calls attention to some evidence of an increasing confusion of reality and fantasy created by the pervasiveness of the television medium in the home. A number of examples of so-called critical skills-training procedures for addressing this question of helping children recognize the reality and fantasy components of the television medium are identified. Specific research approaches to dealing with the implementation of school programs which include lessons and videotape materials are described.

There remain many unanswered questions. While there are suggestions that realistic aggressive material is more easily imitated, the data from the studies by Singer and Singer (1980*a*,*b*; 1981) indicate that violent cartoons may also stimulate aggressive behavior or that children watching fantasy heroes, such as *Bionic Woman* or *Incredible Hulk*, are likely to show either overt aggressive behavior (at earlier ages) or are likely to show dissatisfaction, unhappiness, and distress in the school setting (Zuckerman et al. 1980). The persisting belief by industry representatives that fantasy violence does not influence negative emotions or produce imitation seems increasingly to be an erroneous position.

With the Zillmann review we move further into the discussion of the emotional implications of the medium. Zillmann provides a thorough examination of the as yet sparse but growing body of research on the emotional impact of the medium and its relation to general arousal processes of the brain. Zillmann's review calls attention to the desirability of more precise study of the optimal level of arousal suitable for maintaining attention without interfering with effective information processes. Some of the data cited in this review call attention to the correctness of many television producers' judgment that a somewhat rapid pace is best designed to hold children's interest and to produce experiences of enjoyment. Less certain are the long-term effects of continuous exposure to high levels of arousal (with the possible consequence of impoverishment of appropriate affect).

Does the lively pace of television generate expectations in children of high levels of arousal as part of all new presentations of material? Nursery school and elementary school teachers complain increasingly that children in the television generation expect a level of humor and entertainment and rapid-paced presentation as part of teaching that is quite different from expectations of earlier generations. As Zillmann notes, the longitudinal research evidence to support this view is clearly lacking. There are suggestions in at least some studies that children exposed to heavy doses of television and particularly to arousing programs are less likely to show persistence during the course of spontaneous play (Singer and Singer 1981). Although evidence from research is still sparse, we should not overlook the widespread reports of the teachers who are, after all, closest to children on a daily basis.

Zillmann's review also raises questions that merit much more extensive study. To what extent are sheer entertainment and effective education somewhat incompatible? Is there a fundamental limitation occasioned by the very nature of the arousal response of the organism to the kind of presentations available on television, that makes the medium unsuitable for presentation of orderly, sequential, and complex material? Surely much incidental learning can occur from entertaining programing, but such learning is less likely to be characterized by those reasonably orderly, causal, or analytic frameworks that characterize the most efficient knowledge we acquire.

Dorr's presentation elaborates upon Zillmann's more general emphasis on arousal further by stressing the specific patterns of emotion increasingly recognized in psychological research. The fact that emotions, while largely inborn, are differentially related to particular kinds of information-processing situations and patterns of communication raises the possibility that television can play a significant role in helping children identify emotions and learn their appropriate use within our society. Such a possibility is pointed out by Dorr's references to the data derived from studies of the *Mister Rogers' Neighborhood* program which makes a conscious and specific effort in this direction for preschoolers. It is increasingly clear, however, that discussions guided by teachers and parents with older children about more complex material on television can lead to useful improvements in children's awareness of their own emotions, heightened empathy, and increased moral sensitivity (Singer and Singer 1980*a*,*b*).

Dorr points to an issue that merits further exploration in future research. In discussing the "uses and gratifications hypothesis" which suggests that lonely youth might watch more television for "company," she also notes the possibility that such heavy viewing may further preclude the young person's acquisition of appropriate social skills. There are data that third, fourth, and fifth graders who were heavy viewers and who watched a good deal of fantasy-aggressive program content also were reported by their teachers as more unhappy and troubled in behavior at school (Zuckerman et al. 1980). The possibility of a complex interaction, a mutually reinforcing system in which viewing preferences may further reinforce styles of emotionality and social experience, beckons for more sophisticated research than is currently available.

If we turn next to the cumulative effects of the special properties of television formats, do we find evidence of relationships to educational attitudes and school learning? Morgan and Gross systematically examine these issues and contribute much new information not available before the late 1970s. It seems likely that heavy viewing, while somewhat more characteristic of lower IQ children, may also limit intellectual growth in a number of ways by reinforcing poor habits of reading and homework so necessary for effective learning. The possible displacement effects in which the introduction of television to communities that have had minimal exposure before leads to lowered reading or other general school performance scores are supported in studies outside the United States. What is less clear is whether growing up in a television-oriented society may not lead to as much displacement or to other types of adjustment, e.g., variations in educational aspirations.

Morgan and Gross point up the necessity for much more careful analysis of possible curvilinearity in the IQ-television or reading and school learning and television correlations. On the whole, most studies report that heavy viewing is inversely related to reading or school achievement, but this effect may mask an influence of the medium toward a middle-range performance. Heavy television viewers from low IQ groups may actually be stimulated and improve in world knowledge and readiness for school achievement. Brighter children, however, who watch a great deal of television may indeed be reading less, generating less differentiated vocabularies, and may move to lower levels of school achievement than might be expected from their initial capacities. Television may be producing a homogenization effect around a lower central tendency, a result certainly in keeping with reductions in SAT scores over the last decades. The Morgan and Gross review cautiously avoids strong statements but indicates that statistical analyses of large samples, taking into account IQ groupings, social class, sex differences, and differential educational aspirations, may be able to yield some more precise conclusions soon. It should be noted, however, that almost all these studies reflect *total* television viewing. It remains to be seen whether specialized programing may have differential influences on later reading or educational aspirations.

The accumulating evidence from these reviews suggests that the special properties of television require more serious attention by parents, industry, and educators than was recognized before the mid-1970s. It is clear that children at different age levels process content differently and react with great variations not only in comprehension but in affect to the special format of U.S. television. This awareness has led to a call for the development of programs for teaching children "critical skills." As Corder-Bolz' review indicates, for children of various age levels new programs are now being designed to prepare them to deal more effectively with the pervasive television medium. For the youngest segment of the society, kindergarten through the elementary grades, programs designed for school use put emphasis on explaining how television works, on reality-fantasy distinctions, on alerting children to the nature of commercials or pointing up the necessity of avoiding direct imitation of violent segments. For older children and adolescents, increasing emphasis is being placed upon critical analysis and esthetic awareness of the medium, in addition to reinforcement of the earlier emphasis on comprehension of the medium.

As yet there have been few careful evaluations of the new curricula. Control and experimental group designs have been employed in only a few studies (e.g., Singer et al. 1980), but extension of programs around the Nation may permit more extensive examination of their effectiveness. The Yale third to fifth grade curriculum with its associated videotapes is currently being tested in 10 cities using pre-post designs, but programs for other age groups (e.g., junior high or kindergarten) need more thorough study. It is also simpler to test whether children master the lessons and generalize somewhat to new material. Whether such programs in the schools can change viewing habits or produce a truly more discriminating and critical-viewing child or young adult is a challenge for research in the 1980s.

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Cognitive Processing in Television Viewing

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The history of mass media research has been dominated by a dual focus on content and audiences. The major themes have been whether, in what ways, and for what parts of the mass audience mass media effects occur (Comstock et al. 1978; Stein and Friedrich 1975). Little attention has been given to what audiences do with television. In recent years, two levels of audience activity have emerged as research foci. One, the uses and gratifications approach (e.g., Blumler and Katz 1974), emphasizes the orientations that guide viewing preferences and patterns of consumption. The other, the topic of this review, concerns viewers' activities relevant to perceiving, remembering, and evaluating the content of particular programs. A major theme in this research is the possibility that viewers of varying ages, abilities, and social backgrounds may respond differently to the content of television programs because of the different ways in which they process the content of the medium.

This view of both the audience and the viewing process has been inspired by several related trends in behavioral science. Under the influence of experimental psychologists, a concept has emerged in which individuals' roles in mental events are seen as active and constructive, rather than passive and associative (e.g., Bransford and Franks 1972). The theme has emerged strongly in developmental and social-psychological research in the past decade.

The implications of these views for the study of responses to television have recently caused many researchers to shift their attention from a focus on program content and outcomes of viewing to an analysis of the cognitive tasks involved in viewing particular programs and the ways in which viewers of different ages, with different cognitive capabilities, might accomplish those tasks. In part, this cognitive-processing perspective recognizes that individual viewers bring to viewing varied skills and predispositions that result in different representations of the same television content and, further, that these different perceptions may carry important implications for the social impact of programs.

In this review,[1] I attempt to characterize the questions raised and the evidence amassed as a result of this relatively recent vantage point on the process and effects of television viewing. The focus is on studies of cognitive processes—what viewers do, overtly and covertly, in response to what they are watching and the representations of the content that result from their activity. The amount of research is not large—perhaps fewer than 75 published articles and books since 1970. Furthermore, virtually all of the studies involve variations in children's processing of television content; in only a few instances have other segments of the audience, including adults, been addressed. Although the literature appears to be growing in size and scope, the research reviewed here pertains almost exclusively to processing of television content by children of different ages.

The Television Stimulus

Several comments should be made about the nature of the television stimuli that constitute the processing task for viewers, young and old. Television presentations consist of a series of sequential visual and auditory signals, organized in particular ways in different types of programs. In children's programs like *Sesame Street*, the organization consists of a series of disconnected bits, or scenes; in dramatic programs, the sequence of scenes is subordinated to a plot or narrative. Other types of content differ from both of these in one or several ways. Whether within short bits or across an hour-long plot, television programs commonly share two general characteristics: (1) They contain information that is both *relevant* and *irrelevant* to the theme of the program; and, in most cases, (2) important program information is *explicitly presented*, and sometimes *implied*. For example, in dramatic programs, two scenes showing contrasting circumstances may occur, with the implication that something has occurred to cause or enable a change from the first to the second; often, these linkages are important to understanding the plot—as in the case of the inference that events portrayed early in a program caused a later event. The linkages must be inferred by the viewer, since they are only implicit in the program itself. Thus, representation of programs is considered in recent research as fundamentally depending on abilities for (1) attending to and retaining relevant content that is portrayed amid attention-getting but extraneous information and (2) inferring implicit program events.

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Two questions have dominated the research: (1) What are the nature and the determinants of children's attention to television? (2) How much and what kind of content is retained from viewing typical fare? Recently, interest has turned toward the particular processing requirements posed by unique features of television programing and, thus, differences between media in the nature and outcomes of processing.

Attention to Television

Television is both a pervasive presence in children's environments (cf. Medrich 1979; Parke 1978) and a purveyor of complex information that varies in its attractiveness and comprehensibility. It is also considered to have substantial control over children's attention, eliciting their regard through visual and auditory displays that are highly salient for viewers and, thus, making them passive receivers of the content of programs and commercials. Thus, one fundamental question about young viewers' processing is how their attention to the television screen is regulated.[2] A focal question has been the extent to which young viewers' attention is controlled by what is presented to them, rather than by their own active processing of program content.

In typical studies of this problem, investigators have sought to identify correlates of children's attention to the screen under naturalistic, distracting circumstances; unseen observers monitor children's visual regard to the television screen in a playroom containing toys and games and/or other individuals. Under most research conditions, of course, it is difficult to assess reliably where a child is looking and to record gaze duration with sufficient precision to permit meaningful interpretation of changes in visual attention. Recent technological advances in laboratory-recording equipment and methodological and statistical innovations have made it possible to record precisely and to analyze many data points over the course of viewing. For example, in one laboratory (Alwitt et al. 1980), children's looking at the television screen is recorded by observers' pressing a key to activate an auditory signal. The signals, recorded in real time, are subsequently played back through an analog-to-digital converter and transformed by computer into times of onset and offset of each "look" at television. These real-time sequential data can then be examined in connection with momentary characteristics of television content and other events. The result has been highly informative chartings of children's attention to television as a function of attributes of television presentations, age, and individual differences.

Attentional Inertia

The activity of even quite young viewers during television viewing becomes apparent in the context of one general characteristic of children's attention. They tend to continue attending to a circumstance or activity, like the television screen, once looking has begun. Anderson, who with his colleagues discovered this characteristic in studies of young children's viewing, labeled the principle "attentional inertia." The conceptual opposite of habituation, inertia refers to the pattern of attention in which the longer children have been looking at the television screen, the greater the probability that they will continue to look. Inertia also characterizes *not* looking: The longer children have directed their attention elsewhere, the less likely they are to begin looking at television. These parallel patterns of children's attention appear in the data of individual children, as well as in group averages; they are not an artifact of averaging across individual attentional styles. They also hold across an age period of 1–5 years and have been replicated on various samples of children and college-age adults (Anderson et al. 1979). Consonant findings come from Krull and Husson's (1978) report that 4–5-year-old children's attention to *Sesame Street* is best accounted for by the focus of their attention in adjacent scoring periods (in this case, 30-second intervals).

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[2] The question is different from the issue of selective exposure, which refers to putting oneself in proximity to an instance of content or deliberately failing to do so (cf. Sears and Freedman 1967); in research on attention the question has been whether a viewer looks at the television screen, given that the set is operating.

Thus, young children show attentional tendencies that may well be characteristic of television viewing generally.

Factors in Attention

Viewers' inertial tendencies do not, however, override either individual differences in viewing styles or the content and presentational characteristics of programs. Even preschool children's attention varies in response to diverse content. Indeed, in the first 2 years of life, capabilities exist for discriminations among televised events, such as recognizing that the direction of action has changed in a videotaped conversation between two adults (e.g., Golinkoff and Kerr 1975). At the same time, several dimensions of individual and developmental variation are apparent.

Viewer Characteristics. Most research on attention has been conducted with children of age 5 or younger, and—not surprisingly—within this restricted age range, there are notable changes in typical attention patterns. Six-month-old infants attend to an operating television set only sporadically (Hollenbeck and Slaby 1979), but the sheer amount of time spent looking at an operating television set increases dramatically during the years from 1 to 5. Among 1–4-year-olds watching *Sesame Street* in Anderson's laboratory, proportions of time spent looking at the screen increased from 12 percent to 55 percent, with the largest increase (25 percent to 45 percent) coming between ages 2 and 3. After this major increase, amount of visual attention increases more gradually up to age 5 (Levin 1976). Linear age trends are also reported for attention to commercials over the preschool and early grade school years (Wartella and Ettema 1974).

The increase in attention to programs was largely due to the greater frequency of older children's looking toward the television, even when they were playing with other toys; as they grew older, children gave longer looks and gave them more frequently (Anderson and Levin 1976; Anderson et al. 1979). Anderson concluded that "children begin purposive, systematic TV viewing between 2 and 3 years of age" (Levin and Anderson 1976), an appraisal buttressed by parents' reports of sharp increases in their young children's television viewing around age 2½ (Anderson et al. 1979). Stable and reliable individual differences among children have been reported, even when age is controlled statistically as well, but their significance is not yet known. For example, reported patterns of viewing differences did not correlate with standard measures of intelligence and personality (Levin 1976).

Content Attributes. Attributes of particular programs also attract (or inhibit) children's attention to the screen when they are looking elsewhere and help to maintain or interrupt attention when children are already viewing. Despite the powerful general effects of distractors, age and individual viewing patterns, and attentional inertia, children are responsive to the content and presentational characteristics of shows.

The most detailed evidence on this point comes from Anderson and his colleagues (Alwitt et al. 1980; Levin and Anderson 1976), who correlated children's visual regard to the screen with the presence of 44 visual and auditory attributes in segments of children's programing (ranging from *Sesame Street* and *Mister Rogers' Neighborhood* to *The Flintstones*) and general-audience shows heavily viewed by children (e.g., *Gilligan's Island*). Their results showed that attention was recruited and maintained by attributes like women characters, women's and children's voices, auditory changes, peculiar voices, activity or movement, camera cuts, sound effects, laughing, and applause. Negative attributes—those that terminate looks at television and inhibit further looks—included male voices, extended zooms and pans, animals, and still pictures.

Anderson notes with some surprise the strong effects of auditory cues on visual attention and, in fact, suggests that the attracting and inhibiting force of many visual attributes occurs largely because of their association with sound attributes (Anderson et al. 1979). Undoubtedly, fluctuations in attention as a function of auditory attributes partly—perhaps largely—reflect children's learning that certain types of auditory and visual cues are usually associated with significant on-screen content. Even young children have probably acquired expectations about such associations through their previous exposure to television. It seems likely that, while engaging in other activities, children monitor an operating television set at some level and shift their attention to the screen in response to certain auditory or peripheral-vision cues.

Comprehensibility and Attention. At what level are program attributes being monitored by children so that their attention varies in consonance with them? While Anderson and his colleagues found that attention fluctuates corresponding to specific standard attributes of characters, settings, and presentations, Krull and his associates (Krull and Husson 1978; Krull et al. 1978; Krull et al. 1977), using an information-theory measure of the characteristics of programs, failed to find a relationship between general program complexity and 4–5-year-olds' attention to *Sesame Street*. Possibly, even these young children are processing program characteristics semantically, i.e., in terms of the meaning of the content. Specific categories of program attributes may elicit children's expectations about the importance of what is on the screen at any given time; the more general and formal characteristics assessed by the information-theory measure, which simultaneously incorporates multiple features of the presentation, may mask the particular cues of significance to young viewers.

Some further findings of Krull et al. (1978) with respect to older children are consonant with this interpretation. Among 7½–8½-year-old viewers of *The Electric Company*, these researchers report 200–300-second cycles of attention that anticipate cycles in the complexity of the program. They hypothesize that the accumulated viewing experiences of these somewhat older viewers have equipped them to anticipate cycles in typical presentations and to regulate their attention accordingly. Perhaps more general and abstract knowledge about the form of the medium is acquired by this later age and is added to knowledge of specific, immediate content-attribute associations that affect the attention of the younger viewers studied by Anderson.

The Comprehensibility-Attention Hypothesis. The apparent reliance of even quite young children on predictable associations among visual and auditory cues led Anderson to question popular conceptions of television's power to capture children's attention. Anderson argued the converse: Children actually attend selectively on the basis of perceived comprehensibility of content. He hypothesized that children respond to auditory and peripheral-vision cues that ordinarily have been associated in their viewing experience with salient and informative action. Thus, young viewers attend to the television screen when they encounter these cues; and when the cues are absent, they are likely not to attend or to turn their attention away from television.

This hypothesis was tested in two ingenious experiments (Anderson et al. 1981), in which the effects of auditory cues on visual attention were more closely examined. The authors found that concrete dialog (i.e., dialog concerned with immediately present objects and persons) elicited visual attention more effectively than abstract dialog or no dialog at all, indicating that young viewers shifted attention in accord with the content-relevance of the auditory cues. The researchers subsequently manipulated the sound and visual tracks of a *Sesame Street* program. In some segments of the hour-long tape, the content was presented normally; in others, the visual track was scrambled by random editing, but the dialog was not; in another, the audio track was played backward, but the scenes were left in their proper sequential order; and, in a fourth, a Greek-language auditory track was substituted for the English track. In a second version of the tape, the scenes that had been perverted in the first tape were presented normally, and the normal ones were edited to distort either visual or auditory cues. When the auditory track was perverted, there was much less attention to the screen than when the visual channel was distorted or when the segment was presented normally. The authors conclude that the poor comprehensibility of the auditory-track distortions discouraged attention to segments that, in their normal form, attracted children's attention. Thus, children were not captured, nor held captive, by perceptually salient cues when content was incomprehensible; rather, their patterns of attention "reflect the development, with TV viewing experience, of sophisticated strategies for optimally distributing visual attention to the most informative parts of the TV program" (Anderson et al. 1981).

To date, few extensive content analyses have been reported to chart the relationship between formal attributes and the occurrence of significant and informative program events. Such a hypothesis is intuitively reasonable, however, given the stock ways in which characters and devices are employed in much programing (cf. Leifer et al. 1974; Sternglanz and Serbin 1974). Moreover, in a recent content analysis of *Sesame Street*, Bryant et al. (1978) noted that "apparently the producers . . . reserved . . . electronic embellishments of the basic messages for times when critical material was present" (p. 55). Thus, at this point, Anderson's explanation and evidence are compelling. They are particularly noteworthy because of the indication that even very young viewers, who have generally been thought to be controlled by the stimulation of salient perceptual features of programs, in fact allocate their attention in terms of the sense, not merely the form, of television content.

Activity versus Passivity in Viewing. The responsiveness of even very young children to cues about the comprehensibility and informativeness of television content has led Anderson (1979) and others to argue that, far from being a passive experience, television viewing elicits active processing of content early in life. During typical viewing, children shift from low-level monitoring to more focused attention in a manner that parallels specific and general characteristics of the on-screen content of shows. Their responsiveness to the perceptually salient features of programs results at least partly from the high probability that these noncontent features of shows will be correlated with content that is important to the sense of the show. Both Anderson and Wright (Wright et al. 1979) hypothesize that the significance of these formal features is derived from viewing experiences. Wright also proposes that experience leads to habituation to perceptually salient formal features, resulting in an age-related decline in attention to such features for their own sake; as a result, there is a general shift with age away from attention commanded by highly salient perceptual features of programs to attention marshaled in the service of logical search for meaningful aspects of programs.

The evidence to date on children's attention to television, then, supports the notion that children are active in allocating their attention to various parts of a presentation. We turn now to the corollary question of children's capabilities, once they have turned their attention to television, for comprehending the content of typical fare.

Comprehension of Programs

In the past decade, a number of studies have been addressed to comprehension—the encoding, retention, and retrieval of information from a variety of types of shows, including children's shows, general-audience dramatic and news programing, and commercials. Two questions in particular have guided research: (1) How much and what kind of information is retained from the content of typical programs, and (2) what is the nature of common comprehension difficulties, particularly those experienced by young viewers? Research on this problem has been almost exclusively developmental; thus, our perspective is the age-related course of comprehension. Of course, as we shall see, a number of age-related factors in addition to chronological age or maturation per se contribute to the patterns that have emerged.

The question of what is acquired cognitively from television programs is not a new topic for research, of course. Classic early studies of television (e.g., Himmelweit et al. 1958; Schramm et al. 1961) and film (e.g., Holaday and Stoddard 1933) addressed the issue of media impact on children's knowledge levels; and a few later studies of film presentations (e.g., Maccoby and Wilson 1957) reported acquisition of specific information from programs and variations among children in attention to characters and memory for their actions. The implication that viewers might represent television portrayals in varying ways, with potentially different social outcomes, was not generally appreciated at the time of these studies, however.

Variations in viewers' processing of programs are particularly pertinent in the case of dramatic presentations, where a coherent story is presented through a sequential series of scenes over relatively long time spans. At least three cognitive tasks are involved in comprehending such materials: (1) selective attention to central program events; (2) orderly organization of the program events; and (3) inference of information about implicit relations among explicit scenes (Collins et al. 1978). An example of the latter is the imputation of a causal relationship between two scenes, although the causal connection is not explicitly depicted. The task of inferring content relations across the span of a typical dramatic program has been referred to as "temporal integration" (Collins 1978).

The findings of the past decade essentially confirm that substantial variations in comprehension occur with age, general experience, and knowledge of the television medium. Although many questions remain, several general conclusions have now been well documented.

Retention

In general, children as old as 8 years have been found to retain a relatively small proportion of depicted actions, events, and settings in typical programs; memory for information particularly important to plots and other primary messages (e.g., commercial appeals) improves dramatically across the grade school- to high school-age range, however (Collins 1970; Collins et al. 1978; Flapan 1968; Leifer and Roberts 1972; Newcomb and Collins 1979; Purdie et al. 1980). These age-related trends appear in studies of a range of types and instances of content—children's programs, general audience dramatic programs, public affairs programs, and commercials.

The age-related course of retention has been seen in both types of explicit content that characterize programs: *central* content, or material essential to the sense of the presentation, and *peripheral*, or incidental, nonessential, content. In studies of memory for explicitly presented events in general audience entertainment drama (Collins 1970; Collins et al. 1978; Newcomb and Collins 1979; Purdie et al. 1980), young grade school children (second and third graders) have consistently been found to remember only about 65 percent of the content identified by panels of adult judges as essential to understanding the narrative. Recognition memory improves linearly with age in these studies, however; by eighth grade, viewers are typically found to recall 90 percent or better of the explicitly presented central information. Preschool and kindergarten children's retention of the central content of *Sesame Street* vignettes has also been reported to be quite low (Friedlander et al. 1974; Calvert and Watkins 1979; Reich 1977), despite the presumably age-appropriate content and facilitative production techniques characteristic of this program. Pronounced age differences have also been found in retention of commercials (Wackman et al. 1979) and news stories (Drew and Reeves 1980). Thus, within the sizable child audience, children vary considerably in the completeness with which they retain the content of typical fare.

Factors in Retention. The reasons for poor retention of central content by preschool and grade school children are undoubtedly complex. Studies of retention have, however, revealed some important aspects of age differences in processing. One line of evidence indicates that younger children's difficulties in retention may stem from poor selection and encoding of relevant content. For example, while both central and peripheral, or nonessential, content are increasingly better recalled with age, plot-relevant information accounts for an increasingly larger proportion of what is remembered (Collins 1970; Collins et al. 1978; Calvert et al. 1979). Indeed, in one study (Collins 1970), peripheral-content memory actually bore a curvilinear relationship to age: Recognition measure scores increased until early adolescence and declined thereafter. Whether peripheral retention declines among more mature individuals obviously depends on the interest value and difficulty of the presentation (Calvert et al. 1979; Collins 1970; Hale et al. 1968; Hawkins 1973), but diverging central and peripheral content curves have been found for different instances of typical content, including situation comedies, action-adventure dramas, and a cartoon produced for school-age children.

Poor memory for central content among younger children cannot be attributed simply to greater likelihood of forgetting relevant content or the interference of other program events. Collins and his colleagues (Collins and Westby 1981; Purdie et al. 1980) recently adopted a procedure that involves the interruption of viewing at different points for different subgroups of children and the testing of them on knowledge of explicit content and inferences up to that point. One group of children sees the entire program without interruption and is then tested on the full battery of recognition items to provide a check on possible contamination of post-interruption answers in the other three conditions. The authors report that children tested on content they had seen only minutes before performed no better than children who were asked the same questions at a much later time; throughout the program, second graders' performance was poorer than fifth and eighth graders'. Similar findings were reported in a study of retention of *Sesame Street* content by Friedlander et al. (1974). Thus, preschool and young grade school viewers probably retain essential content poorly partly because they select and encode it inadequately. In fact, the diverging relationship between central and peripheral content has been interpreted as reflecting children's increasingly greater ability to recognize and encode essential content while filtering out extraneous details.

A somewhat different but consonant perspective (Wright and Vlietstra 1975; Wright et al. 1979) is that age differences in dominance of central content reflect a developmental shift from an early tendency for attention to be commanded by highly salient perceptual features of shows (whether essential or peripheral to the plot) to a more mature pattern in which attention is intuitively marshaled in the service of logical search. Wright attributes the shift both to general cognitive development and to the increasing amount of experience with television accumulated as children grow older. According to his formulation, viewing experience results in habituation to salient perceptual features of presentations and also in an induction of the "grammar" of the medium, including the structure of programs generally; in addition, with age, there is likely to be greater knowledge of how individual programs and their segments are ordinarily constructed.

Experience with television is clearly an important source of knowledge and skills relevant to processing of subsequent content. Nevertheless, currently available evidence indicates that retention of even the most important features of shows is relatively poor for young grade school children, despite the many hours of viewing in which a child engages between toddlerhood and the early grade school years. It seems likely that age differences in cognitive processing may be based on some more general determinants of cognitive performance, perhaps of the sort outlined by Piaget in his theory of the development of cognitive structures and operations (which no doubt reflects the effects of a broader range of experiences than television viewing per se). Both the skills acquired through viewing experiences and the cognitive capabilities that enable viewers to find the logic and meaning in presentations contribute to older viewers' more complete representations of programs.

The Role of Segmentation Skills in Processing. One such skill is children's ability to "chunk" the information included in television content. Television programs may be viewed as streams of events of many kinds; and, while some segmentation is imposed by changes of setting and camera changes, an elemental task of processing is segmentation of the stream of program events into discrete units. The information to date is limited, but suggestive. For example, Wartella (1978), following Dickman (1963) and Newtson (1973), found that older children demarcated larger units, often encompassing all or parts of several scenes, while younger children typically chunked program information into smaller units, often less than the duration of a scene. Correspondingly, as in other research, younger children remembered individual scenes better than the relations among them. Mature perception may, however, involve flexibility in segmentation of event streams; adults appear to use small units when necessary to comprehend fine details of action but ordinarily adapt to the need for grosser perceptions of action (Newtson 1973). It may be that in television viewing younger viewers lack sufficient knowledge of the general flow of events and thus search for meaning by attending to details of portrayals. One priority for future research should be further investigation of the development and function of segmentation processes in television viewing.

Inferences

The second major aspect of television comprehension is the coherence with which programs are encoded. Since much of the socially relevant content of programs is only implied by on-screen events, viewers must infer implications and linkages that "go beyond the information given" (Bruner 1957). Typical programs, in which relevant content is portrayed over relatively long timespans, require temporal integration of discrete scenes in order for the plot to be coherently perceived.

In the most extensive series of studies of inferential processes (Collins et al. 1978; Collins et al. 1981; Newcomb and Collins 1979; Purdie et al. 1980), age differences in inferences about implicit events and their relation to retention of explicitly presented content have been examined. The research is conducted by undertaking detailed content analyses of the structure and interrelationships of scenes in programs; with the help of panels of adult judges, the significance of explicit content and implicit relationships are then assessed. Recognition memory instruments are then constructed to test children's inferences as well as their knowledge of the explicit events from which the inferences must be drawn. Additional procedures, both verbal and nonverbal, have been used as checks on the validity of the recognition instrument.

Children tested on recognition memory items derived from this approach show linear improvement in spontaneous inference making about essential program content across ages; however, at each age, the proportion of correct inference answers is lower than the proportion of correct explicit content answers (Collins et al. 1978). The possibility that younger children's poor inferences are only an artifact of inadequate memory for explicit events is ruled out by conditional probability analyses, in which the likelihood of an inference is calculated, given that a viewer knows either all, some, or none of the explicit events on which the inferences are based. These analyses (Collins et al. 1978; Newcomb and Collins 1979; Purdie et al. 1980) indicate that second-grade viewers are significantly less likely than fifth and eighth graders to infer implicit content, even when they know the explicitly presented information from which the inferences are to be drawn. Indeed, younger grade school children have only performed at, or slightly better than, chance level in these studies.

Apparently, older children spontaneously attempt to make discrete scenes coherent by inferring implicit relationships—a change to more abstract, logical processing that is consonant with the qualitative shifts described by Piaget (1954). This shift is undoubtedly partly a function of more sophistication about television plots (Wright and Vlietstra 1975; Wright et al. 1979); but the more coherent, objective quality of, the processing required to accomplish this task also reflects increases in general knowledge and skills for abstract inference that parallel other developmental changes in performance during the same age period (e.g., Brown 1975; Flavell 1977).

Methodological Issues. It is often difficult to determine the validity of the indications researchers extract from children—particularly young children—about their mental states. The difficulty is especially great when the only source of data is the children's own statements, which may be constrained by the child's language ability and other referential and expressive skills for reporting the complexities of what they know. While sensitive analysts can often make worthwhile use of such data (e.g., Flapan 1968), results are often compromised by inappropriate procedures for establishing coding categories and assigning children's responses to them.

In one of the few direct comparisons of verbal reports to other methods, Wackman et al. (1979) recently compared recall and recognition item assessments of children's knowledge of commercials. Their results indicate that recall procedures considerably underestimate the retention levels revealed by recognition memory procedures. Most recent studies of television comprehension have involved procedures that are less dependent on children's productive-language capabilities or have included both open-ended interview studies and elicitation procedures. In most instances, the verbal procedures are carefully pretested to avoid confounding comprehension of programs with verbal difficulties in responding to comprehension questions (e.g., Calvert et al. 1979; Collins 1978; Friedlander et al. 1974); in addition, these pretested procedures are supplemented by both verbal and nonverbal procedures that permit internal checks on the indicators of a subject's understanding. Indeed, if there is a bias in the recognition procedures used in most of these studies, it is probably toward an overestimate of what the child understands about the show. Given the very poor comprehension assessments that have uniformly emerged across studies for younger viewers, children's understanding of much typical television content may actually be poorer than the available evidence suggests.

Interventions to Improve Comprehension. The analysis that has guided studies of comprehension of complex television presentations has also been the basis of several attempts to improve understanding of programs. Two general types of strategies have been attempted: (1) pre-viewing instruction to create a set for certain program information, and (2) provision of additional information during viewing by an adult co-viewer. For example, Huston-Stein and her colleagues (Friedrich and Stein 1975; Watkins et al. 1980) conducted several tests of interventions in which adult co-viewers provide cues for young viewers. In one study, Friedrich and Stein (1975) found that stating verbal labels for nonverbal cues improved kindergarten children's retention of visually presented information. Adult co-viewers' statements about the nature of program events and their relationship to other parts of the plot led to improved comprehension of explicitly presented content for both kindergarteners and third and fourth graders (Watkins et al. 1980). Similarly, Collins et al. (1981) reported that second graders' understanding of implicit relations among important instances of explicit content improved when an adult co-viewer stated three fundamental relations at critical points in the plot, although the improvement did not generalize to plot comprehension overall. A condition in which adults merely restated the action of the program did not affect comprehension, however; apparently, it was the implicit content specified by the co-viewers and not the attention-directing function of the statements per se that affected comprehension scores.

There has been less effort to improve children's understanding by providing pre-viewing instructions or training, and results have been mixed. The primary example is the effort of Wackman et al. (1979) to train children in the categories of information about products commonly included in commercials (e.g., what the product looks like, how it works, what it tastes like, etc.). The training sessions lasted about 3½ hours over a period of about 2 weeks. When subsequently tested for their memory of specific commercials, the training groups of both kindergarteners and third and fourth graders showed significantly better retention of concretely presented product information (e.g., how many items of a product are in a package) than the no-training control group; however, the training program did not affect retention of more abstract kinds of product information (e.g., "requires experience and skill"). In contrast, telling children to "try hard to remember as much as possible" from a dramatic program did not lead to improvement of retention by second graders, even when a material incentive was provided (Collins et al. 1978). The authors speculate that the second graders lacked adequate cognitive strategies for improving their comprehension of the program and, thus, could not retain significantly better, even though they had incentives for better performance. Providing labels or statements of implicit information, on the other hand, appears to facilitate children's comprehension by instantiating parts of the comprehension task that children do not or cannot accomplish spontaneously. Once these critical aspects of processing are made available, young viewers may be able to achieve on their own the other activities necessary for accurate representation of content.

Children's Representations of Content

Thus far, the emphasis has been on what children fail to understand from typical programs. A different and equally important perspective on the problem is what young viewers do understand from the programs they typically see, granted that—compared to older viewers—they comprehend less of the narrative-essential explicit and implicit content of programs.

Most attempts to characterize children's representation of shows have emphasized characteristics of the information that is especially frequently remembered or is relevant to children's own prior knowledge. For example, Holaday and Stoddard (1933), in an early study of retention from films, found that scenes with particularly salient auditory cues and action features were likely to be retained, a result consonant with recent findings (Calvert et al. 1979) that young children remember plot-essential content associated with salient formal features better than plot-essential content presented in less salient ways. In view of the relation between attention and comprehensibility of content (Anderson et al. 1980), these relations are not surprising. There is, however, little satisfactory direct evidence on the effects of attention on comprehension, largely because most measures of attention rely on visual regard as an index and thus do not take account of the important role of auditory monitoring in children's comprehension of content.

Holaday and Stoddard also reported that portrayals of generally familiar settings or events were especially well remembered by school-age viewers. Recent analyses of children's understanding of programs have focused further on retention in relation to children's general knowledge about persons and events. For example, Collins recently suggested that age differences in comprehension are partly attributable to the way in which children deploy their common knowledge in understanding television programs. Analyzing interview protocols in which children described a television program they had seen, Collins and Wellman (1980) found that both older and younger children mentioned events that were common knowledge for most viewers, but only older children took account of aspects of the portrayal that were idiosyncratic to the program. Furthermore, in recognition memory measures, younger children were more likely than older to choose wrong answers that represent stereotypical outcomes of event sequences, rather than errors involving incorrect linkages among explicitly portrayed elements of the program (Newcomb and Collins 1979). It seems likely that both younger and older viewers readily recognize common knowledge sequences in programs. In addition, however, older viewers also recognize—and, perhaps, note the potential importance of—events that deviate from common expectations, while younger viewers appear less likely to notice such deviations or to appreciate their unique significance within the portrayal.

Prior social knowledge appears to underlie individual, as well as developmental, differences in children's comprehension. Individual differences may be especially pronounced within the younger age groups, for whom comprehension of the explicit content of programs is often poor. Newcomb and Collins (1979) recently reported research in which black and white children of lower and middle socioeconomic status in the second, fifth, and eighth grades saw either a program with white middle-class characters or one with black lower-class characters. Comprehension of explicit and implicit events differed for second-grade youngsters in terms of the match between their own previous experience backgrounds and the characters and settings portrayed in the program. Both white and black lower-class children understood the lower-class family portrayal better than the middle-class second graders, while middle-class children of both races understood the middle-class portrayal better than their lower-class counterparts. Apparently, the general knowledge available to the two groups was somewhat different and, for second-grade viewers, permitted differential understanding of the programs. At the two older ages, however, viewers from all groups understood both programs equally well, perhaps because their more extensive and varied social knowledge made it possible for them to understand a range of types of portrayals. Thus, within the younger age group, in which understanding is generally unreliable, there appeared to be individual differences that are accounted for significantly by variables that summarize viewers' previous social learning experiences.

Although we currently know most about the ways in which young viewers are likely to fail in understanding typical television fare, an important direction for future research is the nature of what they are likely to retain and how common assumptions about television effects might be altered by their typical perceptions.

Three Factors in Processing Television Content

Although the most pronounced effects throughout the research on processing of television content concern age-related skills of viewers, a focus on age may mask issues of what viewers of all ages are required to do in comprehending television portrayals—a question that necessarily involves both the nature of the medium and the viewers' knowledge and skills.

In this section, three requisites for the comprehension of typical media programs that have emerged from recent research are discussed: (1) knowledge of common formats for exposition (e.g., narratives, commercial appeals, etc.); (2) general knowledge and expectations about situations and event sequences (i.e., how events and interactions ordinarily proceed), commonly referred to as "world knowledge"; and (3) knowledge of the form and conventions of the television medium. These three types of knowledge are pertinent to most typical television content, although most of the specific references will be to the popular entertainment programing that has been of interest with regard to the social impact of the medium.

Knowledge of Exposition Forms

To understand most television content, viewers must have an operating concept of certain fundamental formats in which information is presented. Most of these formats are taken for granted, but recent research in cognitive psychology and in studies of television indicates that knowledge of one fundamental format, story forms, is at least partly a function of age and experience. For example, in recent research on prose stories (e.g., Mandler and Johnson 1977; Poulsen et al. 1979; Stein and Glenn 1979), preschool and young grade school children's relatively poor recall of story details has appeared to be related to inadequate general structures according to which story details might be parsed. Stein and Glenn reported marked differences between first and third graders in their recall of simple narratives; third graders elaborated significantly more in retelling story details than first graders did, particularly when there was missing information that fit basic categories of story structure that the older children had more adequately mastered. A somewhat different factor has been emphasized by Sedlak (1979) and others (Bower 1978; Schank and Abelson 1977; Schmidt 1976; Wilensky 1978; Worth and Gross 1974). They assume that inferences about connections among an actor's behaviors require that the observer recognize a plan or a point of view behind the action. Sedlak (1977) suggests that young children fail to comprehend the actions and events in an adult-like way because they begin with different interpretations of the various actors' intentions and points of view.

Collins' research (Collins et al. 1978; Newcomb and Collins 1979; Purdie et al. 1980) generally confirms that children's comprehension of programs is affected increasingly with age by the structure of the narrative, although the particulars of processing are also affected by a confounding of structural features of content with complexity of content and the formal-presentational features characteristic of the medium. Other common exposition formats, like news stories and commercials, have not been studied. Recently, however, the importance of format in commercials was underscored by Wackman et al. (1979), who found that training children on types of information ordinarily included in commercial messages leads to improvement in their retention of those details. Thus, the importance of knowledge of exposition format apparently extends to processing of this pervasive type of content. Recent analytic models and empirical studies (Baggett 1979; Berndt and Berndt 1975; Grueneich 1978; Omanson 1979) illustrate methods for considering the structure of expositions in studying the responses of both children and adults to media presentations.

"World Knowledge"

Much of television comprehension—involving as it does a wide range of common and uncommon portrayals, including many implicit features—draws on knowledge derived from general experience of perceptual, cognitive, linguistic, and social phenomena. It has been noted, for example, that children differ—both across age and individually—in their capability for understanding language constructions, which also characteristically vary across typical television content (Reich 1977). Similarly, viewers vary in their expectations and bases for understanding mental events (e.g., psychological causation, cf. Berndt and Berndt 1975) and social events and actions that are often pertinent to comprehension of the circumstances and events of typical programs. The research by Collins and Wellman (1980) and by Newcomb and Collins (1979) indicates some implications of prior knowledge and expectations for comprehension of programs.

At this time, it is not clear how social knowledge is represented and how it enters into comprehension of television portrayals. The most extensive evidence comes from theory and research on prose narratives (Bower 1978; Bower et al. 1979; Mandler and Johnson 1977; Warren et al. 1979; Schank and Abelson 1977; Stein and Glenn 1979), but few details are known, and several contending perspectives at present guide research efforts (Omanson 1979). The most detailed account of the role of prior knowledge in understanding stories is the scripts approach (Schank and Abelson 1977), in which prior knowledge, in the form of stereotypes of event sequences, enables inferences about gaps in the linkages between the actions or states of the story characters. Like other views of the role of schemata in processing of social information (e.g., Cantor and Mischel 1977; Hastie in press; Judd and Kulik 1980; Taylor and Crocker in press), the script formulation implies hierarchical information structures in which the highest most abstract levels are supported by a rich store of specific experiences or bits of information at lower levels. Such structures affect both encoding (Bower 1976; Markus 1977; Rogers et al. 1977) and retrieval (Cantor and Mischel 1977; Hastie in press; Zadny and Gerard 1974) of information about newly encountered persons and events. Neisser's (1976) characterization applies generally to current views of the effects of structures in social information processing from television:

> A schema is like a format in a computer programming language. Formats specify that information must be of a certain sort if it is to be interpreted coherently. . . . Information can be picked up only if there is developmental format ready to accept it. Information that does not fit such a format goes unused. Perception is inherently selective (p. 55).

Little attention has been given to the assessment of relevant schemata in studies of comprehension of television programs. In most social psychology research, manipulations have been introduced to activate certain commonly available schemata, which have then been observed to affect memory for a stimulus (e.g., Cantor and Mischel 1977; Taylor and Crocker in press). Recently, however, Bower and his colleagues (Bower et al. 1979) and Nelson (1978), the latter working with children, have attempted to specify knowledge of scripts in task materials for memory and language experiments; and social psychologists (e.g. Markus 1977; Rogers et al. 1977) have also examined the nature of certain social schemata and their role in the processing of new social stimuli. Their strategies are potentially applicable to comprehension of important aspects of social portrayals in television narratives. One focus of future research should be further specification of the nature and representation of social knowledge and its role in the processing of newly encountered social stimuli such as those occurring in television programs.

Knowledge of Media Conventions and Formal Features

A third kind of knowledge that affects processing of audiovisually presented narratives is familiarity with certain presentation conventions. Baggett (1979) recently found that an audiovisually presented narrative had identifiable structure and meaningful breakpoints that corresponded semantically to the breakpoints in a prose version of the same narrative; nevertheless, the way in which information was conveyed in the two media differed markedly. Formal features of programs, such as camera angles and the use of background music, and visual techniques for compressing time and signaling breaks in action carry considerable information for those viewers whose experience permits their meaning to be recognized. Gardner (1980) reports preliminary experimental results that, compared to a picture-book story, a televised version constrained reasoning about the narrative. Book-version children not only remembered more about the story than those who saw a televised version but also drew on their own experiences and knowledge to go beyond the explicit details, while television viewers relied more on details of the presentation itself. Thus, reliance on the conventional media formats may obviate mental activity of certain types in viewing—a hypothesis extensively discussed by Salomon (e.g., 1979). Although little is known about the interaction of social knowledge and knowledge of the presentation conventions that are common to television social portrayals, this dimension of televised information is integral to analyses of children's understanding of programs.

Formal features often confound structural analyses of program content (e.g., story grammars) for explaining the variation in children's understanding of programs. In studies of prose narratives, the explicitness with which story elements are stated can be relatively easily controlled, but control is less feasible in audiovisual narratives because of certain dramatic and cinematic techniques that sometimes result in ambiguous portrayal of important cues. For example, the Japanese psychologist Tada (1969) found that children of all ages had difficulty comprehending a portrayal in which symbolism and filmic devices compressed time and content in the narrative. The clarity with which information is presented audiovisually is also related to formal features, such as pacing, activity level, music, and so forth (Huston-Stein 1977; Krull et al. 1977; Watt and Krull 1974), which often cannot be controlled in audiovisual presentations. This becomes clear in the instance of comparing comprehension of the portrayal of an aggressive resolution of conflict and a negotiated resolution of the same situation (e.g., Collins and Getz 1976). The aggressive portrayal would obviously contrast markedly with the negotiation model in formal features like activity level and pacing and probably cannot realistically be constructed to be more comparable to it in these respects. Prose descriptions of the two events could be more closely matched at a formal level, but comparison between children's comprehension of the two different types of televised content would be confounded by the concomitant variation in presentation characteristics.

Thus, with the naturalistic stimuli of concern to television researchers, it is often difficult to observe the operation of important structural elements and functional categories of content in affecting children's comprehension. Indeed, in analyses of items of content that are particularly easy or particularly difficult for young subjects in Collins' research, the best correlate of comprehension difficulty was the number and abstractness of steps required to infer the relation between scenes in a portrayal, rather than the functional or structural category of the information (Collins 1978). In short, because of the nature of the medium, the goal of research on processing of television content has been to characterize the typical performance of children of different ages in comprehending certain formal categories of content, which have been sampled from across a range of typical programs. The findings thus speak more directly to the issue of how children are likely to represent typical portrayals of social content in dramatic narratives than to the fundamental nature of understanding narratives generally.

Implications for Effects of Television

The emergence of these three factors underscores again the active nature of the viewing process. Typical programs consist of series of discrete scenes, the interrelationships of which imply coherence that must be inferred. Nevertheless, within a vast audience of children—an audience that has been treated monolithically in much research on the effects of television—representations of programs vary considerably. Children as old as 7 and 8 retain the content of typical programs less completely and less coherently than do older children and adults. Although young viewers attend to information that is obviously salient and potentially informative, they apparently lack the strategic cognitive skills necessary for recognizing and retaining less salient plot-essential information and for integrating central events across time in the course of a program. Thus, while viewing is more active and discriminating among even young children than is generally recognized, the strategic skills necessary for mature viewing of complex programs develop markedly over the grade school and early adolescent years.

Implications for Evaluation of Characters. Research on children's discrimination among, and relative liking for, established characters in programs (e.g., Reeves 1978; Reeves and Greenberg 1977; Reeves and Miller 1978) indicates that viewers rely on few simple dimensions in their responses, with little variation across age. Understanding of characters' actions in the context of the plot, however, requires complex processing, particularly when characters are unfamiliar and elements of the portrayals are abstract or indirect and the relations between them implicit. Variations in young viewers' processing of programs are potentially important for the social impact of the medium. For example, Collins and his colleagues reported that the context for violent physical aggression is often not recognized by younger television viewers, despite the fact that the context for aggression is a major basis on which more mature viewers evaluate the action and the character who performs it (Collins et al. 1974; Jones et al. 1971; Purdie et al. 1980). Indeed, when young grade school viewers comprehend the relation between an aggressive portrayal and the antisocial motives and consequences associated with it, their evaluation of the aggressor is notably more negative than when the contextual cues are not grasped (Purdie et al. 1980). Thus, inferences about a character in connection with his actions affect evaluative judgments that potentially may be pertinent to adoption of observed behaviors.

Besides the apparently age-related difficulties in inferring implied connections, there is also ample evidence that, for younger children, the impact of motives and consequences also depends heavily on the ways in which the cues are portrayed separately. For example, young children's ability to employ motive information in making evaluations have been found to be affected by intensity (Gutkin 1972) and valence of the consequences (Costanzo et al. 1973); perceptual salience and explicitness of motives and consequences (Chandler et al. 1973); and order effects and temporal separation (Austin et al. 1976; Feldman et al. 1976). Similar presentation characteristics have been found to affect the extent to which young children can successfully perform other types of social inference tasks (e.g., Kun et al. 1976; Shultz and Butkowsky 1977). Where television comprehension is concerned, effects of presentation characteristics are relevant to what is required when a viewer, particularly a cognitively or socially immature one, attempts to understand varying portrayals of social cues.

Implications for Behavioral Effects. Implications of variations in comprehension of television portrayals for behavioral effects on children and adolescents have been addressed in relatively few studies, and those in which direct measures of both comprehension and of behavior have been taken (e.g., Leifer and Roberts 1972) have yielded null findings. In this regard, the literature parallels discouraging empirical efforts in the areas of attitude-behavior relationships (e.g., Ajzen and Fishbein 1977) and social cognition-behavior correspondences (e.g., Shantz 1975). Nevertheless, in several studies, behavioral differences have been found that, while they do not provide direct ties to measures of comprehension, are suggestive of links between children's representations of programs and subsequent behavior that should be further examined. For example, Collins et al. (1974) found that kindergarten and second-grade children who had watched an action-adventure program had difficulty remembering the relations of the motive and consequences cues in connection with the aggressive action. Although such cues appear to moderate the behavioral effects of observed aggression (Bandura 1965; Berkowitz and Geen 1967; Berkowitz and Rawlings 1963), kindergartners and second graders remembered the aggressive scene but only infrequently knew its links with the motives and consequences. Collins (1973) further reported behavioral differences that ostensibly reflect cognitive-processing differences. This earlier research involved inserting commercials between scenes of negative motives and negative consequences for aggression and the violent scene itself. Under these conditions, third graders' postviewing tendencies to choose aggressive responses increased, in comparison to children of the same age who saw the three scenes close together in time. The task of inferring relations between aggression and the pertinent motive and consequences cues may have been more difficult for the first group than for the second, presumably because of the temporal separation imposed by the commercials. There was no evidence of behavioral differences among the sixth and tenth graders who saw both types of programs.

It is impossible to estimate what part of the variance in the social impact of television is due to incomplete or distorted comprehension of what children see. Certainly, comprehension is only one factor in a complex equation for television effects. Marked variability, however, has been found in children's comprehension of socially pertinent content during the middle childhood and adolescent years; and there is also suggestive evidence of concomitant effects on social evaluations and on behavior in the laboratory. These two empirical thrusts suggest that cognitive-processing aspects of television viewing should become a term in the equation that guides future research on television effects.

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The Forms of Television: Effects on Children's Attention, Comprehension, and Social Behavior

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When television swept the United States and other industrialized countries in the 1950s, much of the research was concerned with the effects of this new medium on the lives and minds of the citizenry, especially children. By the 1960s, research about television had turned to studies of the content rather than the medium itself. Yet the content of television is not unique to the medium. Violence, prosocial actions, stereotypes, and the like can be presented in print, still pictures, or oral descriptions. What is unique about television is the *form* in which information is presented. Television is a visual medium in which a stream of constantly changing images can be generated by techniques that are not replicated in real-world experience. Camera cuts, pans across scenes, zooms in and out, slow and fast motion, and special effects of all kinds are used in unique ways—musical accompaniments, sound effects, unusual cries and noises, canned laughter, and faceless narrators. Finally, of course, television is a verbal medium. The verbal and linguistic conventions of television are not unique. They are the language conventions of the real world, but the ways in which language is used to convey content (rather than the content it conveys) is an important *formal* property of the television medium.

In the past few years, the attention of researchers studying television's influence on children has returned to the forms of the medium itself as distinct from the content presented with those forms. The purpose of this review[1] is to present the recent research on television forms and child viewing and to suggest some issues in need of resolution. Because most of the research is in the early stages of exploring new terrain, the unresolved issues outnumber the solid conclusions, and many of the findings must be regarded as tentative.

Both theoretical and practical concerns have led to the study of television form. McLuhan's (1964) early suggestion that television contained representational codes fundamentally different from those of print remained a vague formulation, until Salomon (1979) and Huston-Stein and Wright (1977) began to elaborate the implications of that notion for developmental theory. Salomon focused particularly on the influence of visual media codes on children's mental processing and mental skills. Huston-Stein and Wright attempted to place television forms (both visual and auditory) in the context of a broader theory of developmental change in patterns of attention and information processing.

The practical concerns of producing effective educational programing have been a second impetus for research on television form. Much of this work has been carried out in conjunction with the Children's Television Workshop productions, *Sesame Street* and *The Electric Company*. The goal is to identify the program attributes or production techniques that are maximally effective in gaining and holding children's attention and in communicating information to them in ways they will understand and remember.

A third reason for studying form has been increasing suspicion that many effects attributed to television content may be partially due to the forms in which the content is presented. We have argued, for example, that some of the aggression-arousing effects of violent television may be a result of the high levels of "hype" typically accompanying violence as well as the violent content. Similarly, most of the research on the effects of prosocial television on very young children has used *Mister Rogers' Neighborhood,* a program notable for its slow pace, gentle style, and unusual language forms. It is possible that some of the positive effects of that program may be a function of its verbal and nonverbal formal properties.

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One may question whether it is possible to distinguish crisply between content and form. Although they can be defined independently, we acknowledge that in practice the forms of television and content messages co-occur in systematic ways. The relationship is probably analogous to that between grammar and meaning in verbal language. Among linguists there is a growing belief that the grammar of verbal language cannot be isolated from semantic meanings (e.g., Fillmore's case grammar 1968). To the degree that form and content are confounded in the real world, all studies of television content are subject to the criticism that their results may be partially a function of the forms in which that content was presented. Theory and research focusing on form independent of content may redress the imbalance so that their interactive effects can be better understood.

Representational Codes of Television

Verbal and nonverbal forms are the representational codes of television. Because children view television at a very early age, it is tempting to assume that these representational codes are simple and of little interest. However, television is a medium that can be processed at differing levels of complexity. There is a difference between superficial consumption of interesting audiovisual events and mental extraction of information from coded messages, a distinction formulated by Salomon (1979). He used the term "literate viewing" to refer to "a process of information extraction by the active negotiation of the coding elements of the message" (p. 189). The notion of "literate viewing" is closely related to the more informal term "media literacy." With age and viewing experience, children's attention to, and comprehension of, television program changes (e.g., Collins 1979; Krull and Husson 1979; Wright et al. 1980). It is presumed that these developmental changes reflect increasing facility with television's conventions and content, i.e., the beginning television viewer is not "media literate" but instead gradually acquires such competence as a function of experience with the medium and the attainment of certain minimal cognitive abilities.

Just because one can become a literate viewer at an early age and without conscious effort does not demonstrate that the task is simple. The representational codes of television range in complexity from literal visual depiction to the most abstract and arbitrary symbols, including verbal language and audiovisual metaphor. The child's task is not an easy one. The change from infants' sensory-motor awareness of alternations in patterns of visual and verbal stimuli (Hollenbeck and Slaby 1979) to the literate viewing skills of elementary school-age children involves a major qualitative advance, accompanied by developmental growth in related perceptual and cognitive skills.

Levels of Representation

The simplest level of representation is literal visual and/or auditory portrayal of real-world information, e.g., a shot of a car moving on the highway. A child's ability to process this level is presumably dependent primarily on perceptual and cognitive skills used in interpreting real-world stimuli. But even at this literal level, object recognition at unusual angles of viewing, lighting, and distance requires perceptual generalization and constancies not yet fully developed in the youngest viewers.

On the second level of representation are media forms and conventions that do not have an exact real-world counterpart. some of these, such as cuts and zooms, are analogs of perceptual experience. For example, a zoom-in is a perceptual analog of moving close to an object. Other media conventions are more distinct from real-world experience. Dissolves, slow motion, musical accompaniments, sound effects, and electronically generated visual special effects are relatively specific to film and television. These features provide a structure for the presentation of content in a manner analogous to syntax in language. A literate viewer must be able to decode the structural meanings of formal features. For example, fades and dissolves often indicate major transitions in time, place, or content; cuts are more often used for minor shifts from one character or viewing angle to another (Huston-Stein et al. 1979). In children's programs, distinctive visual "markers" are used to separate programs from commercials; the literate viewer must understand their function.This understanding is not automatic. For example, 5- and 6-year-olds did not understand the meaning of separators between programs and commercials in one recent study (Palmer and McDowell 1979).

Media codes can also serve as models for mental representation or mental skills. That is, the child can adopt the media forms as modes of representations in her own thinking. Salomon (1979) has demonstrated, for example, that children can learn to analyze a complex stimulus into small parts by observing camera zooms in and out. Apparently, the camera provided a model of the mental process of focusing on specific parts of the stimulus. Media codes can be internalized as forms of mental representation, as suggested by McLuhan (1964), so that people can think in moving pictures with flashbacks, fast and slow motion, changes from color to black and white, and other media conventions (Salomon 1979).

The forms of television can also take on connotative meaning, either because of their repeated association with certain content themes or because of their metaphorical similarity to real-world objects and symbols. For example, rapid action, loud music, and sound effects are often associated with violence in children's programs (Huston et al. 1981). Commercials for masculine sex-typed toys are made with high action, rapid cuts, and loud noise, whereas feminine sex-typed toys are advertised with fades, dissolves, and soft music (Welch et al. 1979). The forms themselves may come to signal violence or sex typing to children, even when the content cues are minimal or nonexistent.

The third level of representation consists of symbolic forms not unique to the medium. Such forms may be nonlinguistic (e.g., a red stoplight) or linguistic. It is also possible for verbal language to encode forms at the other two levels. For example, dialog can encode the literal representation of reality (the first level), as when a speaker describes on-screen objects or events, or dialog can encode the conventional significance of a production feature (the second level), as when a fade is accompanied by the line "Once upon a time, long, long ago. . . ." In this sense of double encoding, it is possible for the first two levels to be nested in the linguistic codes. Such piggybacking of representational means could aid children in understanding the message and also, by association, facilitate their mastery of the codes themselves (cf. Rice and Wartella 1981).

It is apparent that the second and third levels of representational codes found in children's television programs not only have different surface characteristics but also are derived from different sources or experiences. The second level of representation, specific knowledge, is probably acquired largely as a function of experience with the medium. That is not the case with the third level, where symbols are shared by the wider culture. By definition, these codes have currency outside the medium of television and can be learned without viewing television. They also have a different utility in the world, leading to slightly different reasons for investigating them. The media-specific codes are important insofar as they reveal what is involved in a child's processing of televised information. The verbal language of television is of special interest insofar as it contributes to a child's processing of televised messages and other media codes and also, perhaps more importantly, as it serves to facilitate a child's mastery of the general linguistic code (cf. Rice in press).

While the representational functions of the linguistic system have been described by linguists in a long research tradition, the production conventions, or codes, of television have only recently come to the attention of behavioral scientists. The first step in understanding these codes and their functions is to develop descriptive taxonomies for formal features and to describe the ways in which they are used in television productions.

Most descriptions of formal features have been developed for the purpose of studying television's influence on children. This is not to imply that formal features are without relevance for adults or that studies conducted with adult subjects are without implications for understanding children's television viewing experiences. A general discussion of how formal features may influence adult viewers is, however, beyond the scope of this review; only those studies immediately pertinent to child-directed issues and investigations are presented. Readers interested in the effects of television forms on adult audiences may wish to refer to television and film broadcasting and production publications, where issues of form are often discussed in regard to editing techniques. For example, Messaris et al. (1979) argue that editing techniques (the sequence and composition of visual shots) influenced how adult audiences perceived the nature of the interchanges between Carter and Ford during the televised 1976 presidential debates.

Descriptive Analyses of Television Forms

Two groups have attempted descriptions of the occurrence and co-occurrence of formal features in existing television programs. One such analysis of adult programs was based on the information theory construct, "entropy" (Watt and Krull 1974). Entropy or form complexity was defined by the "variability" of sets, characters, and speakers and by the "unpredictability" with which each set, character, or speaker might appear next. Operationally, the entropy measure included the number of different sets, characters, and speakers, and the amount of time during which each of these appeared in the program. These investigators coded a sample of adult programs and demonstrated by factor analysis that the formal features of the programs could be clustered in two major groupings: "dynamism" (roughly the rate of change in scenes and characters) and "unfamiliarity" (roughly the variability or number of different scenes and characters). In a later study, these investigators found that form complexity was correlated with violent content in prime time programs (Watt and Krull 1977). Wartella and Ettema (1974) used the same coding system on a set of commercials designed for children and adults but found that the two factors emerging were visual and auditory features.

Formal features of children's television programs have been analyzed in our work (Huston et al. 1981) to determine what features co-occur, what features characterize animated and live programs, and how formal features differ as a function of target audience or production goals. In two samples of children's programs selected from Saturday morning, prime time, and daytime educational programing (primarily PBS), action (physical activity of characters), variability of scenes (number of different scenes), and tempo (rate of scene and character change) were grouped with visual special effects, rapid cuts, loud music, and sound effects. This package of features was labeled "perceptually salient" because it was characterized by high intensity, rapid change, and rapid motion.

Commercial programs for young children are packed with these perceptually salient forms. Although such formal features are more frequent in animated than in live shows, Saturday morning live programs have higher rates of perceptually salient features than prime time or educational programs. This pattern of heavy reliance on perceptual salience suggests an image of the child in the minds of producers as a being whose attention must be captured and held by constant action, change, noise, and visual onslaught. Although much of what children watch is family adult programing, these children's programs may be particularly important developmentally because they constitute the child's earliest experience with the medium. They may set the standard for what the child expects from television. In addition, they are less likely than adult programs to be mediated or buffered by parents' or adults' viewing with the child. We do not know what effects early experience with heavily saturated television "hype" and violence has on later development, later viewing patterns, or on tastes and preferences in the medium, but these questions are critically important for future research.

Educational programs for young children use some perceptually salient visual features that characterize Saturday morning programs, though at more moderate levels. They combine these features, however, with other forms that have considerable potential for helping children to understand, rehearse, and remember a message. These include child dialog—probably the best form of speech to gain and hold children's attention—as well as songs, long zooms, and moderate levels of physical activity. All of these features provide opportunities for reflection, rehearsal, and review of content. Songs are frequently used to repeat themes and as a device for helping children to rehearse. Long zooms involve slow presentation and/or emphasis of important content. Because young children often understand content that is demonstrated in action, the moderate levels of action may be a particularly important means of conveying information in a form that is interesting and comprehensible to a young child. Educational programs package their content in a set of forms that is quite different from commercial programing for children, and they appear to be designing programs that have good potential to hold attention *and* to communicate a message effectively.

The findings concerning forms in children's programs can also be seen from the perspective of media literacy and its antecedents (Wright and Huston in press). Recall that Saturday morning cartoons were characterized by high levels of action, variability, and tempo. These clusters consist of perceptually salient events, such as physical activity, music, sound, effects, scene changes, and visual special effects. The conspicuous nature of these features may allow the forms themselves to become the message. That is, the child may pay more attention to *how* the information is conveyed than to *what* the message is, especially when the plot lines are thin to begin with. Unnoticed in the entertainment value of the features is the tutorial nature of the experience. The child is receiving explicit cues about how messages are communicated on television. In this case, the relationship between form and content is the opposite of the usual assumption. That is, the forms overpower the content (from the young viewer's perspective), whereas the problem is usually regarded as a matter of the content controlling the form (from the producer's perspective).

Linguistic Codes

The coding systems inherent in verbal language constitute another component of the forms of television. In television programs, verbal language is a code within a code. Descriptive studies of the language of children's television can provide information for two purposes: (1) Knowing the nature of television's linguistic conventions or codes and how they interact with other forms of communication in children's programs is a critical part of any attempt to understand how children process televised information; and (2) analysis of television's linguistic codes may show how they are adjusted in different programs to different levels of linguistic competence in the viewer and therefore how they may, under certain conditions, play an important role in furthering language acquisition itself.

In a pilot study of the linguistic structure of children's programing in relation to formal feature use, Rice (1979) analyzed 25 categories of linguistic coding in six programs. The programs represented animated stories with high, low, and no dialog (respectively, *Fat Albert*, *Bugs Bunny*, and *Road Runner*); a live program representing situation comedy (*Gilligan's Island*); and educational programs differing in age of intended audience and format (*Mister Rogers' Neighborhood* and *The Electric Company*). Three sets of linguistic descriptors were scored: (1) "Communication flow" consisted of measures of length, variability, rate, and repetition of utterances; (2) "language structure" contained measures of grammatical completeness, descriptive qualifiers, and stressed single words; (3) "meaning/content" variables included focusing (i.e., giving selective prominence to [illegible] particular linguistic constituent), nonliteral meanings, explicit instructions, novel words, and immediacy of reference.

Distinctive patterns of language usage were evident in the two educational programs. *Mister Rogers' Neighborhood,* the educational program for preschoolers, presented a moderate pattern of verbal communication: a moderate amount of dialog, without the use of nonliteral meanings or novel words, combined with moderate amounts of focusing and some use of stressed single words. *The Electric Company,* an educational program designed for early school-age children, used the most dialog of all the shows sampled and incorporated techniques for drawing attention and interest to dialog (e.g., focusing, stressed single words, novel words, nonliteral meanings) while at the same time adjusting for easier comprehension of grammatical forms (e.g., short comments, partial grammatical units, low variability in length) and content (e.g., reference to immediately present events). While it is widely recognized that the purpose of *The Electric Company* is to enhance children's reading skills, the fact that it does so by means of intensive verbal presentation is generally overlooked. Both *Mister Rogers' Neighborhood* and *The Electric Company* used techniques that are likely to facilitate children's comprehension of language (stressed single words, focusing), but the latter also used a more complex pattern of verbal presentation designed to challenge the more linguistically competent school-age viewer.

Unlike the educational programs, the commercial programs containing dialog showed little evidence that language codes were adjusted to the level of the child viewer. *Bugs Bunny* and *Fat Albert* contained frequent nonliteral meanings and little focusing. *Gilligan's Island* was particularly high in descriptive qualifiers and nonreferential content. Although *Fat Albert* and *The Electric Company* both presented complex linguistic patterns, they differed in the amount of adjustment to facilitate the viewer's ease of processing. *Gilligan's Island* was unique, i.e., it did not share any distinctive language features with the other shows.

Comparison of the linguistic features with the formal production features of the six programs revealed that the shows with low amounts of dialog (*Bugs Bunny* and *Road Runner*) were high in action, pace, cuts, fades, zooms, visual special effects, vocalizations, sound effects, and music. All of these production features are perceptually salient ones that attract and hold visual attention in young viewers. The two verbally complex shows, *The Electric Company* and *Fat Albert,* each contained some distinctive uses of salient formal features: *Fat Albert* had very high pace, frequent cuts, pans, and background music; *The Electric Company* had a high number of vocalizations. *Mister Rogers' Neighborhood* and *Gilligan's Island* demonstrated lower rates of nonlinguistic formal features.

Such findings suggest a continuum of difficulty of representational coding in this range of children's programs. We would expect linguistic coding to be more difficult for young viewers than the perceptually salient visual and auditory nonverbal codes. The packaging of cartoons, such as *Bugs Bunny* and *Road Runner,* seems well suited to young children of limited media or linguistic competence. Similarly, the simple, comprehensible speech in *Mister Rogers' Neighborhood* is well suited to a preschool audience. More complex packaging in shows aimed at an older audience requires considerable linguistic sophistication and comprehension of distinctive uses of formal features. In some cases, the codes are judiciously mixed in packages of information presentation well suited to the communicative competencies of the intended audience. A moderate level of complexity may be important to maintain interest among older relatively sophisticated viewers.

Just as the conventional meanings of production features can be suggested by exaggerated, perceptually salient presentations used to convey redundant content, so there is evidence of adjustments of the linguistic and production codes that are designed to draw attention to and clarify language forms themselves. For example, the frequent focusing operations and stressed single words on *Mister Rogers' Neighborhood* and *The Electric Company* serve to draw attention to the language codes. Furthermore, in these two programs, the meanings of the linguistic forms are often explicitly depicted. Frequently, the content is a visual representation of the verbal meaning, sometimes highlighted by attention-maintaining visual production techniques, such as cuts to a closer focus or different perspective. At least some children's programs appear to combine language adjustments with selective and supportive use of nonlinguistic salient features, at first to supplement and later to challenge the emerging cognitive competencies of the child viewer.

The language of commercials aimed at children warrants explicit attention from researchers insofar as the intent goes beyond the communication of messages to the selling of products. Presumably, the effectiveness of commercials is dependent upon the nature of the linguistic codes presented (i.e., their basic understandability), their referential accuracy, and their use within the social context. Bloome and Ripich (1979) analyzed the social message units of commercials and how the messages related to plot or social context and/or the product. They found that many of the product-tied references were ambiguous in regard to certain features of products, such as the use of flavorings. Also, there was a subtle shift within commercials from using language in a social context to using language to promote products. Language served to establish the social occasion and then to lead the child to a product and its role in enhancing the social occasion.

The Influence of Television Forms on Children's Mental Processes

When children watch television, they can just sit passively and stare at the set if they choose, but a growing body of empirical evidence suggests that this is not the usual level of response. Instead, children are more likely to become involved in the viewing experience, to work at extracting information from coded messages, to respond cognitively, affectively, and socially to program content. They are mentally and socially active viewers (Wright et al. 1978; Singer 1980). At least some (if not most) of their mental responses are influenced by how the information is packaged, i.e., the media-specific and general representational codes employed (Rice and Wartella in press). The ones for which there is empirical evidence are discussed here: children's visual attention while viewing, and their understanding of television forms, program events, and relationships among characters.

Formal Features and Attention

Visual Attention to Television Forms. Studies using different types of programs found that certain production features or program attributes attract and hold children's visual attention while viewing television (Anderson et al. 1979; Anderson and Levin 1976; Anderson et al. 1977; Wartella and Ettema 1974; Wright et al. 1980; Rubinstein et al. 1974). Even though different systems of scoring production features have been used, there is consistency in the findings. First, auditory features, such as lively music, sound effects, children's voices (but not adult dialog), peculiar voices, nonspeech vocalizations, and frequent changes of speaker attract and hold children's attention. Second, conventional visual features, such as cuts, zooms, and pans have less influence, but visual special effects do attract children's attention. Third, in most studies, high levels of physical activity or action elicit and maintain children's attention. Fourth, changes in scene, characters, themes, or auditory events are especially effective in eliciting attention, though they are less important for maintaining it once the child is looking. Features that lose children's attention include long complex speeches, long zooms, song and dance, men's voices, and live animals (Anderson and Levin 1976; Anderson et al. 1979; Susman 1978; Rubinstein et al. 1974; Bernstein 1978).

Auditory Attention

The finding that auditory events, action, and change elicit and hold children's visual attention, while visual features have less influence, serves to remind us that audition and vision interact in a complex manner during information processing. While there is considerable evidence describing visual attention, little information is available describing auditory attention (or the interaction of the two modalities) while viewing television. Any general conceptual model of how children attend to television (including the factors that are proposed as controlling attention) must take into account both visual and auditory attention. The measurement of auditory attention while maintaining a naturalistic viewing situation has been a challenging experimental problem. Looking behavior can be recorded directly in a reliable and unobstrusive manner; listening is a private mental event that is not amenable to direct unobtrusive measurement. A number of techniques for directly measuring auditory attention are being explored in several laboratories.

Pending satisfactory measures, auditory attention can be inferred by testing comprehension of material presented in the auditory modality or material presented when the child is not looking at television. Repeated findings that children receive and understand fairly complex messages from exposure to *Mister Rogers' Neighborhood,* despite low rates of visual attention, have led to speculation that children were often listening even when they were not looking (Tower et al. 1979). Obviously, auditory attention can facilitate comprehension only for material that is presented in an auditory modality, usually speech. Studies in our laboratory, involving microanalysis of short time intervals within a program, indicate close connections among visual presentation of content, visual attending, and recall (Calvert et al. 1981). Similar precision in specifying the mode through which content is presented would be required to infer that auditory attention mediated comprehension.

Auditory attention can also be inferred by observing visual attention to the screen (or lack thereof) and by observing what children talk about while viewing. If they are talking about things unrelated to the television content, they are probably not listening. Even if they are looking at the set, their attention may be only at the level of monitoring instead of active processing. On the other hand, auditory features, such as foreground music and children's speech, recruit visual attention for children who are looking away from the screen—evidence that some form of auditory processing is taking place.

Form and Content Interactions. One of the original reasons for our interest in television form was the hypothesis that formal features in children's television were more important determinants of attention than violent content. The relative contributions of form and violent content are difficult to disentangle because conventions of production lead to correlations of certain forms with violence. Violence in children's programs is usually portrayed with high levels of action and salient auditory and visual features (Huston-Stein et al. 1979). Yet, formal features can be separated conceptually and operationally from violent content. In one study of preschoolers, we selected programs that were high in both action and violence, or high in action and low in violence, or low in both action and violence. (We were unable to find a low action, high violence program.) Children's total attention differed as a function of action, not violence. That is, they were as attentive to high action without violence as they were when it accompanied violence, and less attentive to low action (Huston-Stein et al. 1981).

A more molecular analysis was performed for these three programs and for four other cartoons by dividing each program into 15-second intervals and correlating attention with formal features and violent content. Multiple regressions were performed to determine which features were the best predictors of attention in each program. Violence did not enter any of the seven multiple regressions as a predictor that contributed significant variance independently of formal features, but considerably more data on different programs and different age groups are needed to establish the generality of this null conclusion (Huston-Stein 1977).

Form, Content, and Viewership Ratings. The relation of form and content to children's interest in television programs has also been studied by analyzing feature occurrence rates in nationally broadcast television programs in relation to national audience ratings for different ages, sexes, and regions of the country. For a sample of 34 Saturday morning programs, high action and violent content were predictors of viewership for preschool children. Each made an independent contribution. Among children from age 6 to 11, variability and tempo were the best predictors of viewership (Wright et al. 1980). In a similar analysis of general adult audience ratings in relation to violent content of prime time adventure programs, violence accounted for a minuscule and nonsignificant portion of the variance in viewership (Diener and DeFour 1978).

How Formal Features Influence Attention

Salience and Informativeness. Basic research on young children's attention indicates that perceptual salience of the stimulus environment is one determinant of attention. The attributes of a stimulus that make it salient include intensity, movement, contrast, change, novelty, unexpectedness, and incongruity (Berlyne 1960). Many of the production features that attract and hold young children's attention fit these criteria defining perceptual salience. We have proposed a developmental model hypothesizing that perceptual salience is a particularly important determinant of attention for very young viewers and/or for viewers with little media experience (Huston-Stein and Wright 1977; 1979).

The theory guiding our work was derived from the more general theoretical work of Wright and Vlietstra (1975) concerning developmental change from "exploration" to "search" in children's modes of information getting. Exploration as a mode of response is governed by the most salient features of the stimulus environment. It involves short duration, discontinuous, and impulsive responding to whatever features of the environment are perceptually dominant from moment to moment. Habituation to the salient features of a particular stimulus environment occurs as one becomes more familiar with it. Application of this model to television experience leads to the hypothesis that, among the youngest and least experienced viewers, the viewing experience consists of the consumption of perceptually salient events as entertainment in their own right. The child's attention is controlled primarily by feature salience. Until the powerful effects of salience have partially habituated, the child is essentially a passive consumer of audiovisual thrills and does not engage in deeper levels of processing (Wright et al. 1981).

Consummatory stimulus-controlled exploration gives way in familiar contexts to perceptual search, a kind of information getting in which the activity is instrumental, rather than consummatory, active rather than passive, and guided by the child's desire to abstract information, rather than by just entertainment, from perceived events. The child's progress from perceptual exploration to perceptual search is believed to be as much or more a function of familiarization through experience and habituation as it is a consequence of cognitive maturation, though, of course, the two are usually confounded. Thus, the older and more experienced viewers are more interested in the content of a program and its meaning and less responsive to salient formal features. When older children do attend to formal features, they may use them as syntactic markers to develop a structural framework in which to organize and integrate their comprehension of content meaning (Wright et al. 1980).

Singer (1980) also proposed that high rates of salient audiovisual events on television absorb children's attention, not only because they are perceptually interesting, but because they are affectively involving. His theory does not, however, contain the proposition that developmental shifts will occur as consequences of cognitive development and familiarity with the medium. Instead, he seems to imply that extensive exposure to salient features in the medium will inhibit other forms of interest (e.g., books and verbal media) and will leave the child focused on the absorbing stimulus features of the moving picture on the screen.

Studies comparing attention patterns of preschool children (age 4–6) with those of children in middle childhood (age 8–10) have supported the hypothesis that younger children are more attentive to salient formal features than are older children (Wartella and Ettema 1974; Wright et al. 1980). In our studies, preschool children attended to high levels of action and audiovisual "tricks," (visual special effects, sound effects, and unfamiliar scenes), but elementary school children were not differentially attentive to these features. Contrary to prediction, however, older children were more attentive than younger ones to programs with rapid pace (i.e., frequent scene and character changes). These studies support the hypothesis that young children's attention is affected by the perceptual salience of television's formal features.

There is less support for the complementary hypothesis that older children's attention is guided more by the informativeness of features, perhaps because informativeness depends on the program context and the child's level of processing. When children try to follow a plot or engage in a logical search for meaning, they probably attend to features that provide cues about time sequences, locations, characters, and events in the program. Studies by Krull and Husson (1979), in fact, suggest that older children may attend to form cues that signal content and form changes during the upcoming 1 or 2 minutes. Preschool children did not show these anticipatory patterns of attention to formal cues. Media literate children may learn temporal associations so they can anticipate what will occur in a program. Older children also attend differentially to informative action and signals associated with scene changes, bit changes, and changes to and from commercials.

Comprehensibility. A somewhat different perspective on the relationship between attention and formal features is proposed by Anderson and his associates, who link attention with the comprehensibility of program content (e.g., Anderson 1979). They suggest that features such as animation or children's voices may serve as signals that the content is designed for children and is therefore likely to be comprehensible. Children may attend to such features, not because of the inherent qualities of the features, but because their media experience leads them to expect meaningful and understandable program content. The fundamental determinant of attention, according to this formulation, is the comprehensibility of the content. Two sets of data are used to support this hypothesis. In one study (Lorch et al. 1979), children's attention to *Sesame Street* was manipulated experimentally by varying the availability of toys and distractions during viewing. Despite the fact that the nondistraction treatment produced very high levels of attention, it did not produce improved comprehension. Within the distracted group, however, the children who attended more comprehended more of the content. This finding was interpreted as demonstrating that comprehensibility guided attention rather than attention determining comprehension. In a subsequent study (Anderson 1979), children attended less to a television program in which the speech was incomprehensible because it was backwards or in a foreign language than to a program with understandable speech. Although the influence of comprehensibility on attention has been tested thus far only by varying language features of programs, the hypothesis suggests that the comprehensibility of nonlinguistic formal features should affect attention through a similar mechanism.

This line of research provides important evidence that very young children are actively processing content when they watch television rather than merely passively consuming audiovideo thrills. It does not, however, establish that feature salience and other noncontent aspects of television programs are unimportant influences on children's attention. In the studies varying comprehensibility, feature salience has been held constant (and fairly high). If salience were low, would comprehensibility alone hold children's attention? Again, the relatively low rates of attention usually found for *Mister Rogers' Neighborhood* suggest not, despite its outstanding comprehensibility. Second, the full range of comprehensibility has not been systematically explored. It is clear that complex, incomprehensible material loses children's attention in comparison to moderately easy, comprehensible material, but one cannot extrapolate that finding to conclude that very easy material would produce more attention than moderately difficult but still comprehensible content. In fact, the model to be proposed here suggests that both extremes of comprehensibility will be less likely to maintain attention than material in the middle range. Moreover, the model explicitly cautions against trying to define moderate comprehensibility as a stimulus feature without taking into account both the cognitive level and the viewing experience of the child.

An Integrative Model of Attention and Development. These seemingly divergent explanations of the determinants of attention can be integrated in the framework of one established model for attention and interest as a function of familiarity and complexity (Hunt 1961).

That model is illustrated in figure 1. The abscissa is a compound of familiarity and complexity of both form and content. On the left end are highly familiar and oft-repeated bits, like the standard introductions and closings of familiar program series, whose informative content is minimal, and whose formal features have become habituated and no longer elicit attention among habitual viewers. The joint processes of habituation and familiarization (Wright 1977) serve continually to depress attention on the left side of the inverted U-shaped function. By contrast, the forms and content at the high end of the abscissa are unfamiliar, complex, and incomprehensible to the child viewer. They, too, elicit little interest and attention because the child is incapable of understanding their meaning and their relation to other parts of the program. Their decoding requires comprehension of standards the child has not yet acquired and logical integration for which the child is not yet cognitively ready. They also often make reference to outside information and contextual knowledge that only adult viewers possess. Thus, attention on the right side of the curve is also low, owing to incomprehensibility. But cognitive development and the child's growing store of background information will, over time, tend to raise attention on the right, just as familiarization and habituation tend to reduce it on the left. The result is a developmental migration of the curve describing a child's attention from left to right as a function of cognitive development and viewing experience. What was interesting for its perceptual salience or simple content becomes boring by its redundancy, and what was incomprehensible or formally complex, and therefore ignored, gradually becomes meaningful and informative in the decoding process and, therefore, of greater interest. If the abscissa is defined in terms of the form and content of a televised stimulus, the location of the curve for a particular child along that gradient is a function of cognitive level (on the right) and viewing history (on the left).

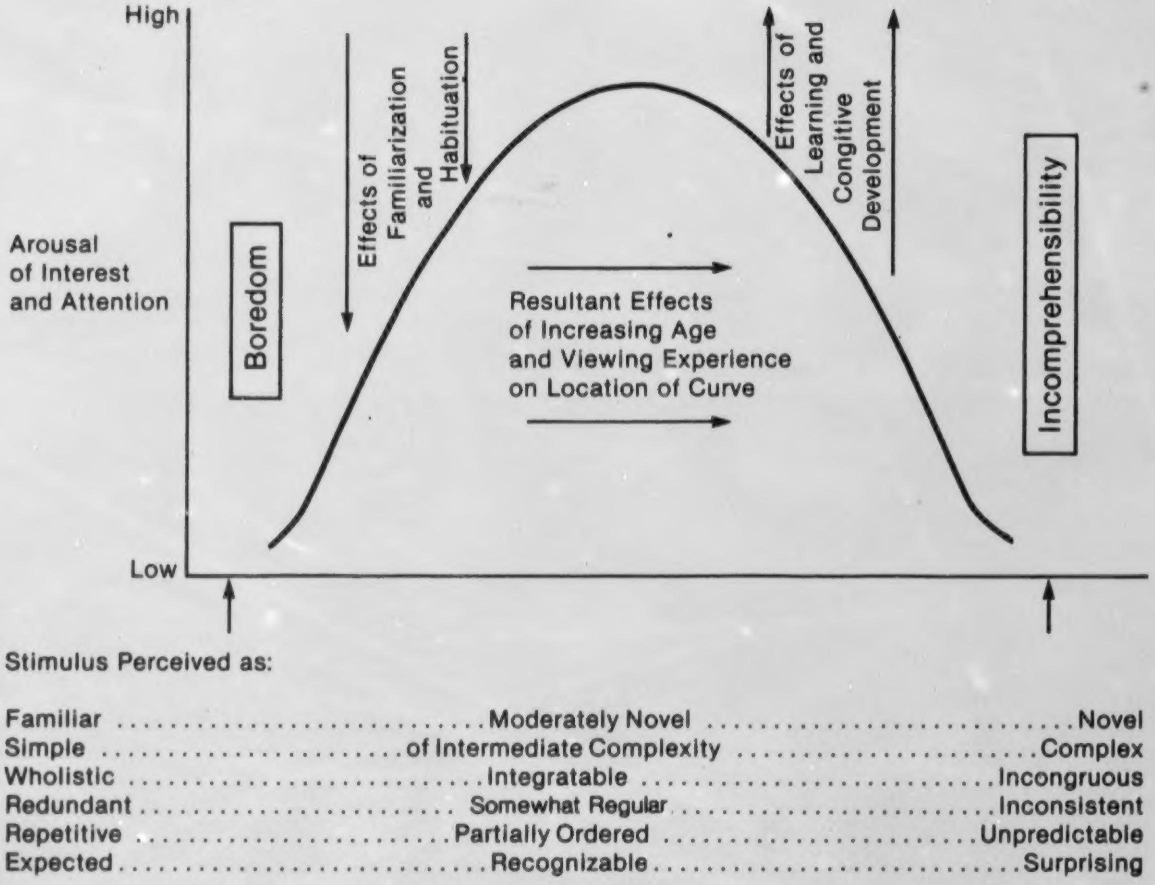
High
Arousal of Interest and Attention
Low
Boredom
Effects of Familiarization and Habituation
Effects of Learning and Congitive Development
Incomprehensibility
Resultant Effects of Increasing Age and Viewing Experience on Location of Curve
Stimulus Perceived as:
Familiar .... Moderately Novel .... Novel
Simple .... of Intermediate Complexity .... Complex
Wholistic .... Integratable .... Incongruous
Redundant .... Somewhat Regular .... Inconsistent
Repetitive .... Partially Ordered .... Unpredictable
Expected .... Recognizable .... Surprising

Figure 1. Theoretical model.

How Formal Features Influence Comprehension

As children attend to television, their immediate task is how to interpret the information they receive, what to make of the messages. The medium's representational codes influence this process of comprehension in a number of ways. The media-specific codes themselves require some interpretation, as do the general representational codes, such as language. The coding systems also interact with content in ways that can enhance or interfere with how easily the content can be understood.

Media-Specific Codes and Mental Skills. Recall our opening remarks about how television does not literally present events as we perceive them in the real world. Instead, the representational codes package messages in a manner that requires mental transformations in order to interpret them. The linkage between forms and mental processes can be quite specific and intimate. Salomon (1979) proposed that some production features may be viewed as representing certain mental skills or mental operations. For example, zooming in and out literally portrays the mental operation of relating parts to a whole. Camera cuts that make the image jump from one part of a physical space to another, or from one view of an object to another, correspond to the mental operations of coordinating spaces and taking different perspectives.

Salomon (1979) distinguishes two different ways in which production features can function in relationship to mental processes, at two different levels of interpretative difficulty: One is the function of "supplanting" the skill. That is, the camera essentially performs the operation for the viewer; presumably, the viewer can learn the skill from watching through the eye of the camera. A zoom-in is an example of a camera operation that supplants the skill of analyzing a complex array into subparts or isolating one small part at a time. The second function of media codes is to "call upon" an already existing skill in the viewer. For example, a cut to close-up shot presumes that the viewer can already relate small parts to a larger whole: It does not perform the operation as a zoom does.

Data on both Israeli and American children support the hypothesis that the understanding of and ability to use common media codes increase with age and, in some cases, with media experience. Younger and less experienced viewers benefit more from media formats or formal features that supplant the intellectual skills to which they relate. Older and more experienced viewers understand recurring formats that call upon related mental skills better than do younger and less experienced viewers (Salomon 1979; Palmer 1978). For example, children who were skilled at visual analysis performed better when shown a "cut to close up" format than when shown zooms (Salomon 1974).

Salomon (1979) argues that the relationship between media codes and children's mental processing is not just a one-way process of using mental skills to interpret media codes. Instead, the influence is reciprocal—experience with media codes actually cultivates the existing mental skills to which they relate; the media codes can become part of children's mental schemata, resulting in their ability to think in terms of such codes as zooms and camera cuts. Salomon cautions, however, that the media-specific codes are not the only messages to affect cognition, and not all of television's codes function in this capacity. He suggests that those codes that are unique to television and have a wide potential field of reference are those most likely to contribute to viewers' mental schemata.

The supplanting function of media form was tested in our laboratory in two studies designed to teach conservation of number by showing children animated television sequences demonstrating that the number of objects was independent of their spatial configuration. Pairs of white and black squares separated into designs, danced around one another, and played games; then they returned to their original arrangement with a narrator's reminder that there were still the same number of blacks and whites. Training improved conservation on a televised posttest of number conservation, but did not generalize to a live test, in the first study. In the second, training influenced performance on both televised and live post-tests (Butt and Wright 1979).

Language Codes. There are several aspects of verbal language that have relevance for how children comprehend the messages of television. The first is how children comprehend the verbal dialog itself. This question has yet to be the subject of explicit empirical investigation (beyond a few observations of how children interpret disclaimer phrases in commercials). We can presume however, that children interpret televised verbal information according to the same linguistic processing strategies and constraints that they draw upon in the presence of live speakers. In other words, insofar as the general representational codes of television are like their real-world counterparts, children probably interpret them in much the same way as they do in other social contexts. The second aspect of verbal language with relevance for comprehension is the fact that, unlike the media-specific representational codes, viewers can produce the general codes themselves to communicate their reactions to and understandings of television. Viewers can process the messages of television and then respond in some of the same codes; indeed, they can literally imitate and rehearse the verbal messages, if they choose to do so.

In one study, we explored what children talk about when they watch television as a function of the amount of dialog present in the programs. Preschool and third-grade children watched four shows that differed in the amount of dialog (one show with none, two with moderate amounts, and one with a high frequency of dialog). The children watched in pairs, and they were free to pursue other play activities. Their comments while viewing were transcribed and coded for content categories. The children made the most comments about the television program when viewing the program with no dialog. This trend was more pronounced among the third-graders than the preschoolers. Furthermore, the television-related comments fell in a distinctive pattern: more descriptions of actions and events, more emotional and self-referenced comments (e.g., "I like this part"), more questions about program content, and more statements of knowledge of recurrent program themes for the no-dialog program than for any of the other three. There were very few directly imitative responses (Rice 1980).

The most obvious interpretation of these findings—that children listen when there is dialog and talk when there is no dialog—does not completely account for the results. The total amount of talking was highest in the no-dialog show, but second highest in the high-dialog show. Children talked to one another extensively during a program with frequent dialog, but they more often talked about topics that were irrelevant to the program. In the program without dialog, the absence of dialog, as well as the fact that the program was familiar and repetitive, appeared to stimulate children to talk about the program. Whether or not similar effects would occur for programs that were less repetitive or familiar is not yet clear, but in a program that is interesting, familiar, and simple to understand, it appears that the absence of dialog may elicit comments about aspects of a program that are of interest to children.

Verbal Mediation of Content. Another aspect of verbal language with relevance for television viewing is that it can be used to mediate and direct more general mental processes, such as attention, comprehension, and recall. Verbal labels and explanations have been used in a number of experiments to clarify children's understanding of program content. In one study, preschool children imitated sharing from a television program more when the program included verbal labeling of the characters' behavior than when the behavior was not labeled (Susman 1976). In another investigation, verbal explanations of program themes inserted in a cartoon with a moderately complex plot were relatively ineffective in improving comprehension, but the same explanations provided by an adult viewing with the child aided comprehension considerably. In particular, children who received the adult explanations recalled the temporal order of events in the program and were able to make inferences about implicit content better than controls. They also attended more to the program. Temporal integration and inferential processing of televised information are skills that are difficult for third graders, yet even 4- to 6-year-olds were able to do them better than chance after the adult explanations (Watkins et al. 1980). Other studies have demonstrated similar benefits for kindergarten-age children from verbal labeling of central program themes (Friedrich and Stein 1975).

Television Form and Plot-Relevant Content. Many television programs are narratives; that is, they tell a story consisting of interrelated events. The content of such stories can be distinguished as plot-relevant (central content) or irrelevant to the plot (incidental content). Developmental changes in comprehension of such content have been explored in some detail (Collins 1979). Through second grade, children have limited and fragmented comprehension of story material, fifth graders do better, and eighth graders comprehend most of the story. In particular, younger children tend to recall material that is incidental and irrelevant to the plot, whereas older children appear better able to select central content messages. Younger children also have difficulty in integrating facets of the story that are separated in time (e.g., connecting an action with its motives and consequences), and they have difficulty inferring content that is implicit in the story but is not explicitly shown. All of these findings are based on children's responses to adult prime time dramas (Collins 1979). The specific ages at which changes in comprehension occur may be slightly different for other types of programs, such as those made for children, but the direction of developmental trends is probably the same.

While developmental differences in children's understanding of television content undoubtedly reflect cognitive developmental changes, they may also vary, depending on the form in which content is communicated. In general, children understand information presented visually, so that character actions can be observed, better than they understand information presented in verbal form without accompanying visual cues. In addition, high action and other perceptually salient features maintain children's attention better than dialog and narration, so children may retain the content presented with salient features better than content conveyed primarily through dialog. Obviously, the combination of visual and verbal cues is likely to be most effective (Friedlander et al. 1974).

In one study (Calvert et al. 1979), children's recall of a televised story was measured for four types of content: Central or incidental content was presented with formal features that were either high or low in perceptual salience. High salience features included visual features and moderately high action; low salience features included adult and child dialog. Central content questions often involved inferences; incidental content usually consisted of isolated factual events. Children remembered central, theme-relevant content better when it was presented with highly salient formal features than when it was presented with low salience techniques. Young children (kindergarten age) benefited from attention to such salient features more than older children (third and fourth graders).

Some parallels appear in a study of commercials in which visual cues and words in the form of slogans or labels actually conflicted with the more abstract verbal message. Visual cues and word slogans suggested that the advertised products contained fruit, although the "higher level" abstract verbal message indicated no fruit content. Children from kindergarten through sixth grade accepted the false message conveyed by the visual and associative word cues. Apparently they did not understand the abstract implied message that there was no real fruit in the products (Ross et al. 1981).

Salomon's work (1979) also indicates that children understand content messages better when they understand the formats used to present the content. For instance, children who were good at relating parts to a whole, and who could, therefore, understand a close-up format, learned more content from a film using cuts to close-ups than did children who were less skilled in understanding that format.

These findings suggest that associating content with certain media codes may increase comprehension of the content, if the production feature is familiar and understood by the child and if it focuses attention on central rather than incidental content. If the child does not understand the code represented by the feature or if the feature focuses attention away from the central content, it may interfere with comprehension. These conclusions may apply to the verbal codes of television as well as to media-specific production features.

To conclude this section on how children's comprehension of television is influenced by the representational codes, we can offer some general observations: The child viewer has the job of making sense of the medium at several different levels: the codes themselves, the immediate content, and more abstract interrelationships relevant to story lines. The representational codes are implicated at each of these levels. Children learn to interpret the media-specific codes as a function of age and viewing experience. Furthermore, certain media codes may come to be incorporated in children's general mental schemata. The general representational code of verbal language has a twofold relevance for increasing our understanding of how children comprehend television: (1) We need to be aware of the particular interpretative demands presented by the verbal dialog as a linguistic code; and (2) children's own verbal comments while viewing can provide further clues about how they comprehend television's messages (cf. Rice and Wartella 1981). The psychological dimensions of television codes can be used to enhance children's comprehension of plot-relevant content: The association of attention-getting features or codes that are readily understood with content central to the story should contribute positively to children's ability to understand the plot.

The Influence of Television Forms on Social Behavior

The initial questions we raised about the effects of formal features on social and task-related behavior implied that form and content might have separable effects on children's behavior. Because certain formal features are correlated with content in existing television fare (e.g., action and noise with violence or slow pace with prosocial behavior), previous findings concerning the effects of violent or prosocial television content could have been partially due to the form rather than the content of those programs (Huston-Stein and Wright 1977).

If form and content have somewhat different effects, some important practical implications for commercial and educational television could result. If salient formal features are primarily responsible for drawing child viewers to cartoons and other commercial programs, but violent content is the main cause of aggressive behavior, then commercial producers might reduce violence in children's programs and substitute nonviolent content presented with salient features. Conversely, prosocial and educational programs might increase their audiences by the use of certain salient formal features without compromising their content.

The theoretical issues examined in our research derived from a comparison of two basic models: observational learning and arousal. Specific and separate effects of form and content can be predicted from observational learning theory. According to that model, viewers should imitate particular types of television content—aggressive content should lead to aggressive behavior and prosocial content to prosocial behavior. Children might also imitate formal features—high action might lead to increased motoric activity; high pace might lead to rapid shifting from one activity to another. Arousal theory leads to contrasting predictions (Zillmann et al. 1974). That model suggests that *either* salient formal features or "exciting" content can lead to a state of generalized arousal; the specific behaviors manifested as a result will depend on the immediate environmental cues and the predispositions of the child. Increases in either aggressive or prosocial behavior could occur if there were appropriate environmental cues. The principal difference between observational learning theory and arousal theory is that the latter leads to a prediction that both form and content of television can stimulate behavior that is quite different from what has been observed in the program, whereas the former predicts that viewers will imitate whatever was presented. Arousal theory has received some support in studies of adults. Both nonaggressive content designed to induce arousal (e.g., erotic content) and formal feature complexity or salience have been demonstrated to induce physiological arousal and aggressive behavior when the stimulus situation provides cues for aggression (Bryant and Zillmann 1979; Watt and Krull 1976; Zillmann et al. 1974).

Two studies in our laboratory provide support for the notion that salient formal features can instigate aggressive behavior in children, even in the absence of violent content. In the first study, animated children's programs containing different levels of action and violence constituted the treatment conditions. There were three programs: high action/high violence, high action/low violence, and low action/low violence. A control group saw no television (Huston-Stein et al. 1981). In the second study, advertisements with different levels of salient formal features—action, pace, visual special effects—were shown in the commercial breaks of a nonaggressive program. There was virtually no aggression in the program or any of the commercials (Greer et al. 1980). Pairs of preschool children were observed in a play situation containing a variety of toys before and after viewing the experimental programs.

In both studies, high levels of salient formal features stimulated aggressive behavior, despite the diverse content and formats of the programs and commercials. When cartoons were shown, children tended to be more aggressive after high action programs than after low action or no television at all. Violent content did not add to the level of aggression found after high action alone. When advertisements were shown, highly salient formal features without violent content led to higher levels of aggression than low salience features. These findings provide support for the notion that arousing form can lead to increased aggression even without the modeling of violent content, just as it aroused more attention with or without violence. An alternative interpretation is that children have learned to associate salient formal features with violent content through experience with the medium, so that they respond to salience as though it contained violence even without explicit content cues. In either case, the results fail to provide producers of children's television with a way of attracting viewers that avoids the adverse effects of violent programing.

The hypothesis that children will imitate formal features—high action or rapid shifts from one thing to another—has received little support. In the two studies described above, there were no differences in motor activity level as a function of program form or content, though the measure may have been restricted by the fact that children were observed in a small room. Negative findings also appeared in an experiment comparing *Sesame Street* programs with rapid versus slow pace (i.e., short, frequently changing bits versus long, infrequently changing bits). There were no differences in impulsivity or task persistence as a function of program pace (Anderson et al. 1977). However, in a field study of Israeli children who were less experienced with television than are American children, those who watched *Sesame Street* regularly did show less perseverance on a routine task than a control group of nonviewers (Salomon 1972).

It appears that no simple causal segregation has yet been, or will be, easily achieved between the effects of television form and content on young children's social behavior. Both form and content can influence arousal. Arousal both enhances attention to the program and enhances the likelihood that its form, its content, and other situational cues present at the time of viewing will be responded to by the child viewer. Separating arousal attributable to formal complexity from arousal attributable to exciting content is another difficult research task that lies ahead.

Concluding Remarks

The empirical study of the forms of television, its representational codes, is in the early stages of investigation. The ultimate goal is to determine how children perceive, interpret, and assimilate the forms of television as an integral part of their viewing experience, how they come to acquire this knowledge, and what impact it has upon their general mental processing. Among the immediate issues is the nature of the relationships among children's viewing history, general cognitive development and the manner in which they respond to television's representational codes.

Another important question is how children may incorporate or generalize television forms to their own mental or social development. To the extent that the forms can be imitated or are similar to possible performance modes, children could, in effect, learn to use the forms themselves. We have already touched on several possibilities: Salomon claims that visual media formats (e.g., cuts, zooms) acquire representational status in children's thought processes; the verbal language of television may, in some circumstances, serve to introduce children to certain linguistic knowledge; action of characters or shifts of activities may elicit similar responses in the social/motoric behaviors of child viewers.

More specifically, though there is fairly strong evidence that certain media-specific codes attract and hold visual attention, we need to know more about auditory attention, how linguistic features influence attention, and the nature of the interaction among forms, content, attention, and developmental change (including both intellectual change and accumulated viewing experience). Still another set of questions revolves around the ways in which formal features of television affect children's comprehension of content. To the extent that such effects occur, are they a function of attention-eliciting and maintaining functions of formal features, or do they reflect the fact that certain formal features are themselves representational codes that children can readily understand? A related issue is raised by critics who suggest that salient, high-paced formats may, in fact, detract from comprehension. It seems overly simple to argue that particular television forms are either "good" or "bad" for comprehension. Instead, the research task is to analyze under what circumstances, in what combinations, and for what types of children particular features enhance or detract from comprehension.

The investigation of television form promises to contribute information that will allow greater specificity in our conceptions of how children process the medium of television. In particular, it will be possible to separate effects attributable to form from those associated with content and to clarify the interaction of the two aspects of television. Closely related to this possibility is another: The study of television codes leads directly to inferences about particular processing abilities of children; the match between televised information and children's mental processes is very close in certain television forms. Furthermore, as we learn more about the representational codes of television, how children come to understand them and use them to comprehend content, we also learn about the general principles of symbol formation, a knowledge with relevance for many aspects of child development. Finally, if, as seems entirely possible, future generations of Americans will do much of their information processing via interactive electronic audiovisual displays and will receive most of their entertainment and much of their education via television, then the development of "media literacy" may become almost as important as that of basic reading skills, whether or not we are ready to acknowledge it.

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Television and the Developing Imagination of the Child

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Imagination in Early Childhood

Considering the degree of input an American child receives from television, we might expect it to have a relation to the development of a child's imagination. Does television with its vast array of information and its complexity of sound plus visual material enhance or inhibit a child's capacity for symbolic behavior? According to Piaget (1962), children preexercise their imaginations through varying degrees of imitation and through assimilation of such material into a limited range of preestablished schema. When a child engages in imaginative play, it is "the symbolic transposition which subjects things to a child's activities, without rules or limitations. It is therefore almost pure assimilation" (Piaget 1962). A child reproduces the events or "fleeting experiences" he or she encounters in daily life through symbolic play. Fein (1975) describes an 18-month-old who pretends to serve her baby teddy bear some tea, using an empty seashell for a cup. Piaget's daughter Jacqueline used a long stone to represent a jug of milk and enacted a little scene offering her imaginary companions Julie, Claudine, Augustine, and Philomène their supper. Her games were "copies of reality," using substitute objects to symbolize the actual ones. Any adult who observes a preschooler for even a brief time is apt to see him or her playing a make-believe game that may have bits or pieces of an actual event that occurred days or even months before in the child's life.

Young children talk out their adventures and games. Their inner representational system is expressed through their conversations or utterances as they play. Studying young children through observations of their make-believe play affords opportunities to understand how these images develop and how they are used. Blumenthal (1977) suggests that "image formation is actually the basis for all higher mental processes. It enables the human being not only to recall what is not present, but to retain an affective disposition for the absent object."

Functions and Origins of Imaginative Play

The possible adaptive benefits of make-believe play have been discussed elsewhere (J. Singer 1973; J. Singer 1977; Singer and Singer 1977) and are briefly listed here. Make-believe play can help children to develop a larger vocabulary; it may play a role in development of sequencing or ordering of events; it may assist them to delay impulses and may foster concentration; it enables them to develop empathy by role taking; it lets them rehearse occupations and roles in society; and it aids in imagery skill development. Research (Singer and Singer, 1976*a*,*b*) suggests, too, that make-believe play leads to a feeling of well-being as indicated by smiles, laughter, and singing of those children rated "high" in positive affect by trained observers blind to experimental hypotheses.

Children get their ideas and material for play from their immediate environment—the stories they hear, the incidents of everyday life—the imitation of situations they observe, and increasingly from the television. Although Schramm et al. (1961) suggest that a primary function of television is its contribution to fantasy behavior of children, work by Dembo (1973), Dembo and

McCron (1976), Greenberg (1974), and von Feilitzen (1976) suggests that children use television for more than escapism and fantasy material. They learn about ways of behaving, dressing, and they get general information about the world. What children actually understand is dependent, of course, upon age and intelligence. The focus of this review is on the preschool and early elementary grade school child—mainly because these are the children who are most likely to be engaged in make-believe or pretend play.

Research Questions

Three research issues bear on the relationship between television and imagination.

1. Does television content enrich a child's imaginative capacities by offering materials and ideas for make-believe play?
2. Does television lead to distortions of reality for children?
3. Can intervention or mediation on the part of an adult while a child views a program, or immediately after, evoke changes in make-believe play or stimulate make-believe play?

Television Viewing and Enrichment

Are children who watch television actively rehearsing the scenes they see? One would speculate that highly imaginative children need to withdraw from the set periodically to play out the material they see. The stimulus may actually be interfering with their own configurations. Some children do watch television with intense concentration. We need to compare viewing styles and see whether or not the highly imaginative child views television with the same degree of intensity as the child who is low in imagination. Intensity of viewing may not have any effect on a child's ability to extract from television, and the imagination variable may be more critical than degree of concentration. For example, during a viewing of the *Mister Rogers' Neighborhood* show (Tower et al. 1979), most of the children did not stay glued to the television screen, but wandered off or turned away from the set. Yet when compared to children who were intent upon the screen when *Sesame Street* tapes were shown, the children who sporadically watched *Mister Rogers' Neighborhood*, for the most part, did as well in tests pertaining to material remembered from the show. It may be that Mister Rogers' careful repetition of phrases enabled the children to process the material, even when they were not looking at the set.

General Evidence Relating to Creative Enrichment

In a longitudinal study with a sample of 141 preschoolers, Singer and Singer (1980) attempted to see which combination of variables (background and television) best predicts the average imaginativeness of play shown by the children across the year. The six variables that yielded a multiple correlation of .45 in estimating imaginativeness of play with an F (6,99) = 4.21, ($p < .01$) include sex (male), age, imaginative play predisposition interview, situation comedy viewing, the proportion of action-adventure television shows watched relative to total television viewing (negative loading), and IQ. In effect, brighter older boys who score higher on an imaginative predisposition interview, who watch a higher proportion of situation comedies but relatively fewer action-adventure shows, are more likely to be the most imaginative children in observed play. Is it possible that these children are being socialized away from the more grossly active programing and perhaps toward a more androgynous viewing pattern rather than toward the traditional male sex role? These data do not lend themselves to a clear determination of causality but are suggestive in this regard.

If a child is watching considerable amounts of television, will he or she generate imaginary companions? Is it conceivable that the development of an inner fantasy life and a fantasy companion may play a counteracting role to the direct imitation of violent material observed either in the home or on television? In a study (Caldeira et al. 1978), using questionnaires with 111 middle-class parents and using an imaginative play interview (Singer 1973), results indicate that 65 percent of the preschool children reported they had some form of make-believe friend. In general, the evidence that a child has an imaginary playmate seems to be a powerful predictor of the likelihood that a child will play happily in nursery school, be cooperative with friends and adults, use somewhat more extensive language, and be less likely to watch a good deal of television (Singer and Singer 1980).

Boys who have imaginary playmates at home and who watch few action-adventure shows are much less likely to be aggressive in overt behavior in the nursery school. Girls included the Bionic Woman or Wonder Woman among their fantasy friends and such characters as Superman or Batman. Boys, on the other hand, showed no such tendency to use female characters but limited themselves to male superheroes when they chose characters from television as imaginary playmates.

Does watching television affect a child's creativity? Although cartoons have an appeal for children as television fare, watching them does seem to affect their creativity, as measured by scores on Guilford's creativity tests. Stern (1973) divided 250 mentally gifted fourth, fifth, and sixth graders into seven groups—six of which were to watch specific categories of television exclusively. The control group had no instructions. After 3 weeks of viewing, subjects were post-tested on an alternate form of Guilford's test of creativity. Results indicated that children who watched cartoons had the greatest decrease in creativity scores. The decrease was not significant, but Stern views this trend as important in terms of the long-range effects of indiscriminate viewing by children. Surprisingly, he found that educational television also depressed creativity scores. The study, though ambitious, has some methodological flaws and needs replication.

Focusing on two variables, facilitation of fantasy and provision for useful information, Parker (1960) studied 900 children in Canadian towns with and without television. First graders with access to television scored higher on vocabulary tests than those without television. Parker also stated that television facilitated fantasy more than comic books, pulp magazines, movies, and radio. Television provided an informational advantage to those students lacking reading skills, but differences in cultural patterns in the communities to begin with might have accounted for these results.

More recently Harrison and Williams (1977) analyzed data on 137 subjects in three Canadian towns: Notel (no television), Unitel (one channel), and Multitel (four channels). The study incorporated fairly careful controls to insure comparability of culture. They administered the vocabulary subtest of the Wechsler Intelligence Scale for Children (WISC), a measure of spatial ability (the Block Design subtest of the WISC) and ideational fluency tasks from Wallach and Kogan's work on creativity. Children were tested in grades four and seven in all three towns; following introduction of television, tests were given to children in grades six and nine who had been tested earlier in grades four and seven. When Notel children were divided at the median according to verbal associative fluency scores obtained before Notel was introduced to television, the authors found no difference in the mean hours of viewing reported after 2 years exposure to television. This would argue against a differential viewing preference for high and low creative children. The Notel children's verbal fluency scores decreased significantly from the first to second phase of the study. Evidence was strong that television exposure is negatively related to children's performance on verbal fluency tasks. There were no town differences for the figural fluency scores in either phase of the project in the cross-sectional comparisons, but Unitel scores increased significantly from the first to second phases. No town differences were found in the longitudinal analysis in either phase and no change for any of the towns. Television apparently did not affect the vocabulary or the performance on Block Design but did seem to have an impact on the creativity scores. Harrison and Williams' observations suggested that displacement effects could explain these results; they noted that creative behaviors often reflected self-generated play activities that did not include television content.

If television appears to be diminishing creativity, it would be worthwhile to examine the effects of television upon school achievement of children in the early grades. Burton et al. (1979) used five first-grade classrooms from two schools in the New Orleans metropolitan area. Data were collected on 128 children in terms of parents' estimated amount of preschool watching, through interviews with children and parents or guardians, and grades of academic performance in three subject areas, language, mathematics, and reading. Sociability of children was measured by assessing choice of playmates. Results indicate that preschool television viewing was inversely related to sociability ($p < .001$) in the first grade. Mothers' education, although it was the most important control variable, showed little impact on the relationship between television viewing and grades. The relationship between television viewing and grades remained significant beyond .001 level with any of the control variables such as time spent with peers, with adults or family, alone, or in school, and years of school. When a stepwise multiple regression was computed with grades, as the dependent variable, and television, peer time, mothers' education, alone time, sex, school time, adult-family time, waking time, total siblings, and fathers' education, the ten independent variables explain 41.1 percent of the variation ($r = .64$). The relationship between preschool television watching and grades did hold.

Examining the correlation of television with the reading habits and imagination of 185 third, fourth, and fifth graders, Zuckerman et al. (1980) found that imaginative behavior was predicted by higher IQ and viewing fewer fantasy-violent television programs. The amount of time children spent reading was inversely related to the amount of time they spent watching fantasy-violent programs. One explanation may be that fantasy-violent programs offer the same kinds of excitement as adventure books, fairytales, or other popular children's books and therefore satisfy the need for escapism and fantasy. This study also found that those children who were heavy viewers of cartoons were rated as low in enthusiasm by classroom teachers. These data, for a somewhat older sample, do argue also for a displacement effect—watching television may replace self-generated activities, such as reading, which are known to stimulate imagination and "world knowledge."

In a study using 120 sixth and seventh grade children randomly assigned to print, audiotape, or videotape conditions, Meline (1976) found that there were differences in the capacities of each medium to stimulate or inhibit creative thinking. Children in the video condition gave fewer solutions which departed from given facts and concepts. Children in the audiotape or print conditions gave more stimulus-free and transformational ideas. This finding does indeed suggest a potential imagination-inhibiting effect of television.

In a similar study, comparing children's apprehension of an unfamiliar story, either read to them from an illustrated book or presented as a comparable television film, Meringoff (1980) found that children exposed to the televised version remembered more story actions, offered estimates of shorter elapsed time and distance traveled for carrying out a repeated story event, and relied more on visual content as a basis for their statements. Children who were read to recalled more story vocabulary and based their inferences more upon textual content, general knowledge, and self-generated use of experience. They also asked more questions and made more comments about the stories. Meringoff used 48 children, 24 younger (mean age 7.6) and 24 older (mean age 9.6) who were randomly assigned to each condition. She did not carry out analyses to determine sex differences, nor did she use a third condition wherein children would read the story to themselves. One further desirable step could be including a condition exposing a group of children to both story and television to determine the advantages of combining them for future classroom instruction.

Dillon (1977) examined the effects of *Sesame Street* and *Mister Rogers' Neighborhood* on 17 3-year-olds' ability to exhibit the same creativity components in the classroom. The author did a content analysis of 10 1-hour segments of *Sesame Street* and 10 ½-hour segments of *Mister Rogers' Neighborhood*, finding similar patterns for divergent thinking, evaluation (categorization), and transformations. She then measured whether children exposed to four tasks taken from *Sesame Street* would show signs of creativity. Mothers reported estimates of television-viewing time for their children. Results indicated that girls did better than boys on verbal tasks, while boys did better on manipulative tasks. No relationship was found between child's viewing and flexibility ratings. Unfortunately, the study depends on parents' estimates of viewing frequency of the two shows, and indications of the reliability or veridicality of these estimates are not satisfactory.

Using fantasy scales based on Singer and Antrobus' (1972) Imaginal Processes Inventory, Rosenfeld et al. (1978) examined the major styles of fantasizing among 748 children. Three styles of fantasizing were found: *fanciful*, in which children daydream about fairytales and implausible events; *active*, in which youngsters dream about heroes, intellectual pursuits, and achievement; and *aggressive negative*, in which daydreams concern killing, fighting, being hurt. Results suggest that for both boys and girls television-violence viewing, fantasy behavior, and sex-role preference are independently related to aggression. Girls rarely engage in negative aggressive fantasy. Those girls who tend to fantasize about *action* — wherein heroes and heroines win games or achieve—are the most aggressive children. On the other hand, the most aggressive boys are those who fantasize about *aggression* —harmful acts to other persons. Aggression in this study is defined as an act which injures another person. Scores for aggression were obtained on a peer-nomination measure of 10 items of aggressive behavior, when subjects were in first and third grade. Children who watch a great deal of action or aggressive television seem likely to reflect it in their fantasies and to carry it out in overt behavior. In data reported by Singer and Singer (1980), there also are indications that children whose play themes reflect specific television references to cartoons, superheroes, and action-detective shows are more likely to be aggressive.

A striking example of the interrelations of imagination, television viewing, and overt aggression emerges from a multiple-regression analysis carried out during a year's study by Singer and Singer (1980). They looked at combinations of variables which best predicted the likelihood of overt aggression by the children in nursery schools. A stepwise analysis indicates that frequencies of viewing of action-detective shows and viewing of television news emerge early in the group of variables. Sex (boys) is, of course, another predictor that immediately follows. Next in order was a negative relationship between aggression and the children's human movement response to inkblots, a well-established measure of imagination and motor control (Singer and Brown 1977). Finally, a summary score based on reports by parents that children are playing at home with imaginary companions is added to the list. These variables together yield a multiple correlation of .73, $F(7 \& 118) = 19.51$, $p < .001$, and account for 54 percent of the variance. In other words, boys who show the least inner imagination as measured by inkblot responses or parental observations and who also watch programing in which there is considerable depiction of violence are the most likely to be overtly aggressive at school.

Results of a study with 200 lower-class preschoolers indicate a persisting link between aggressive behavior or expression of anger at school and the viewing of *Sesame Street* and specifically action-adventure programing or news broadcasts (Singer and Singer 1980). In general, this linkage of action shows to overt aggression confirms results obtained earlier in the work with middle-class preschoolers (Singer and Singer 1980). In the lower-class sample, these findings are especially characteristic of lower IQ nonwhite boys. Nevertheless, by the third probe period, at the end of the year, a factor emerges which clearly links aggression in school, lack of persistence, a high level of motor activity, and the viewing specifically of action-adventure programs: IQ and race do not load appreciably on this factor.

Results indicate that these preschoolers were watching television 3–4 hours daily, with a sizable minority watching 5–6 hours daily. The factor analyses confirm the earlier studies with middle-class children, indicating the presence of a factor of playfulness in which positive affect, imagination, cooperation, and leadership are linked together. The data indicate that by 3 and 4 years of age children show considerable consistency over the year in their play patterns and in their television-viewing styles, suggesting that personality and social interaction tendencies are already fairly well established by these ages.

Of special interest is the evidence that imaginative or make-believe play is not a characteristic of the more isolated or lonely child but is actually strongly linked with positive emotionality and cooperative or leadership behavior in the school setting. The playfulness pattern observed is not itself related to the children's patterns of home television viewing. The data did suggest that children who get into more difficulties at school and show less mature group behavior are among the heavier viewers; they watch more action-adventure (violent) programing and are less likely to be watching specially designed prosocial programs on public television such as *Mister Rogers' Neighborhood* (Singer and Singer 1980).

Cartoons, Imagination, and Aggression

Because television cartoons are often regarded as "harmless" by adults, one important issue that needs further research is the effect of cartoons on children's behavior. Belson (1978) found that the viewing of violent cartoons by adolescent boys did not promote violence, but it is important to note that his subjects were age 12 to 17. Singer and Singer (1980) found that preschoolers who watched considerable amounts of *Woody Woodpecker, The Roadrunner,* and *Tom & Jerry* were the most aggressive children in daycare centers. This research carried out on 200 lower-class subjects using cross-lag analysis partialing out IQ, socioeconomic status, and other background factors found that the amount of television viewing was a more significant predictor of future aggressive acts among the children than was aggressive behavior predicting heavy viewing of television at a future time.

Steuer et al. (1971) also found that exposure to aggressive cartoons increased the aggressive behavior of children. Interestingly, sex differences were found by Hapkiewicz and Roden (1971) concerning the effects of aggressive cartoons on children's play. Boys who viewed aggressive cartoons showed a reduction in sharing as compared to girls; the authors suggest that cartoons with aggressive content may actually affect behaviors other than aggression. Ellis and Sekyra (1972) randomly assigned 51 first graders to three groups viewing either a football contest, an aggressive cartoon, or a neutral film. Behaviors were classified as physical and verbal, with categories further delineated under each. Subjects were observed immediately after treatment conditions. Results indicate that subjects who viewed the aggressive cartoon emitted significantly more hostile acts than subjects in the other conditions.

An interesting aspect of the cartoon-violence issue was explored by Haynes (1978). To what extent do children perceive cartoons as violent or as comic and nonviolent? Classifying cartoons as "true to life" violence with no comic effect or "comic" wherein the violent act is portrayed in a comical manner, Haynes used a randomly selected sample of fifth and sixth grade children. A total of 120 children, 58 males and 62 females, were randomly assigned to either a *Dick Tracy* cartoon—the authentic stimulus—or to a *Pink Panther* cartoon—the comic stimulus. Results indicate that comic violence was perceived as more violent than the more realistic Dick Tracy violence. The children who viewed comic violence perceived it as not being acceptable, while those who viewed authentic violence perceived that violent action was more acceptable or the right thing to do.

Finally, Hart (1972) suggests, based on a study of 8- and 9-year-old boys exposed to different amounts of cartoon violence, high excitement cartoons, or a no-film group, that there was no difference in numbers of hostile, anxious, or aggressive responses to two fantasy measures, Holtzmann Inkblots and the Thematic Apperception Test. Hart did find marginal support for a decrease in fantasy aggression in the group with continuous aggression exposure (the cartoon-violence group). The author attributes his failure to obtain more definitive results to the shortened versions of the measures he administered, thereby reducing their reliability. One can at least assert that heavy viewing did not enhance the child's fantasy tendency as measured by the projective tests.

Implications

The available studies on possible enrichment effects of television viewing do not seem to be sufficiently comparable, nor do they reflect sufficient attention to the specific programs viewed, to the general frequency of viewing, to the nature of the content, or to age-specific trends. Despite the commonsense expectation that watching a lot of television should provide considerable play content and foster imagination, the data generally contradict this expectation. If anything, heavy viewing and especially the viewing of more violent shows (including cartoons) seem tied to overt aggressive behavior and less imaginative play, especially for very young children. Children who reflect a good deal of cartoon content in their play are often more aggressive and less cooperative. There is little evidence of any constructive impact of the cartoon material on the very young and at least some evidence of a negative impact, including reduced associational fluency and creativity.

In general, considering the attraction cartoons hold for children, we know surprisingly little about the impact of specific types of cartoons or of their effect on the child's construction of a reality-irreality dimension. We need more work that looks at predisposing tendencies and specific program diets and their effect on spontaneous behavior in children.

Distinctions Between Reality and Fantasy and Distortions of Reality on Television

Piaget and Inhelder (1971) state that, by age 7 a child begins to think logically and moves into the stage of concrete operations. One would expect children in this stage to be able to differentiate between reality and fantasy and to understand those camera effects that enhance the fantasy dimension on the screen. Feshbach (1976) attempted to assess whether the effects of a "fantasy" versus a "newsreel" portrayal of violence could produce a diminution in aggression. Using 60 subjects ranging in age from 9 to 11 years, half from middle-income and half from lower-income groups, he randomly assigned them to one of three experimental conditions: reality, fantasy, or control (no television). Different instructions were given in each condition. The children were shown a newsreel portraying a riot. One group was told that it was a real riot and the other that it was a fictional riot. Subjects were given an opportunity to aggress against an experimenter at the conclusion of the film and after exposure to a brief questionnaire. Feshbach concluded that behavioral effects of "witnessing the depiction of aggressive, violent acts on television are dependent upon program, contextual, and personality variables." He believes that drama in general may enhance self-awareness and that media-depicted violence ending in punishment "may increase one's understanding of the aversive consequences of violence and thereby tend to reduce aggressive behavior." The "fantasy" condition in his experiment reduced aggression. Feshbach suggested that the "fantasy" label acted as a discriminative stimulus. Unfortunately, we have no further studies indicating the extent to which clear labeling will have positive effects in reducing aggression after viewing aggressive content. For younger children, fictional stories may well be perceived as real.

Noble has carried out numerous studies examining effects of television on children (1970*a*, 1970*b*, 1973, 1975). He found that children played significantly less constructively after seeing realistic violence rather than stylistically filmed aggression. They played more constructively after seeing stylistic aggression filmed at a distance from the victim. Noble also suggested that 5-year-olds have more difficulty in determining what is true or real than do 6-, 7-, and 8-year-olds. He found too that, in retelling stories they had seen on films, the 5-year-olds added people and objects that were not in the film. Five-year-olds were also unable to comprehend when a story ended. They embellished stories with their own imaginative people or ideas.

Noble (1975) reported that in a study of 30 children exposed to either *This Is Your Life* or *Sports Day*, 14 thought a person had spoken directly to them, and 6 of the children answered back. The reality of the set for these children involved them in "conversation" with the television characters.

Snow (1974) asked 50 preadolescent children to tell what their favorite program was and if they thought the program was "real" or "make-believe." All of the children could identify cartoons as make-believe and news as real, but there was a split of opinion about shows like the *Brady Bunch*. Children were also asked if they recognized a difference between their own make-believe play and real situations. All were able to do this. It was found that the children preferred make-believe television and related it to their own play. These children also did not describe a cartoon, *Roadrunner*, as violent because they classified it as make-believe. When violence is interpreted as play or make-believe, it does not seem to affect the child according to this author. The children could make the distinction between "funny" and "serious" violence in television.

In contrast to Snow's subjects who could, for the most part, differentiate between what is real and what is make-believe on television, Garry (1967) reported that preschool and primary grade children accepted what they saw on television as real but considered it part of their play life. Westerns were less disturbing to them than crime and detective stories which were closer to real life. Garry also stated that expressing aggressive behavior in play would not mean that this behavior would carry over into real life. This depends on the similarity between observation or learning situation and the situation in which learning could be applied. Events on television that involve children, according to Garry, have a greater impact on them, especially if they are of the same age and sex.

One interesting research by Sawin (1977) looked at the fantasy-reality distinction in televised violence. Using 120 fifth graders and 120 kindergarten children, all middle class, he assigned them to view a violent incident by treatment combinations: reality instructional set, fantasy instructional set, no instructional set, and no television exposure (subjects looked at nature booklets). Subjects operated a control panel with "Help" and "Hurt" response buttons, that was connected to a space-maze game played by a "nonexistent" same-sex child not seen by the subjects. Results indicated that in general boys were significantly more aggressive than girls. The lowest levels were in the fantasy condition and the highest in the reality and the no television condition. For girls, the lowest level of aggressive responding was in the reality and no television condition, and the highest was in the fantasy and no instructional set. Age level did not affect results. The author explained the sex differences by a socializing hypothesis. He offered no explanation for the high level of aggression in the no television condition, and this leaves one wondering about these subjects' predisposition to violence. Sawin suggested that, for boys, real aggressive outbursts are more tolerated by parents and by peers, while fantasy play with dolls in an aggressive manner would be labeled "sissy stuff."

Work with older children (Chaney 1970) suggests that a television program has stronger effects on 12-year-olds, if the viewer fails to maintain a balance and blurs the distinction between different characteristics or content such as realism and aggression. Some boys in the sample who were highly involved in the aggressive aspects of program content were more likely to believe that the programs with the most violence were also the most realistic.

Morison et al. (in preparation) attempted to assess how well children could distinguish real from pretend on television. The authors hypothesized that the "development of competence with discriminations of reality status would be related to a child's understanding of television and its camera techniques." They also hypothesized that the technology of television might confuse a child "bent on discovering the boundaries between the world of fantasy and reality." Interviews were carried out with six girls and six boys in each of the first, third, and sixth grades in a working-class community. Sophistication with reality-fantasy and children's understanding of television concepts increased with age. First graders showed the greatest variability in their ability to remember and recognize television programs. Amount of television viewing did not seem to play a significant role in a child's ability to differentiate between reality and fantasy. The most important ingredient may be knowledge of the television medium rather than amount of viewing time. The authors suggest that teaching the child about the medium would facilitate his or her ability to make reality-fantasy distinctions on television.

Using Piaget's theory of animism "in light of the television viewing experience," Quarfoth (1979) presented four tasks ranging from concrete picture sorting to abstract interview questions to 34 kindergartners, 23 first graders, 20 second graders, 21 third graders, and 20 fourth graders. Subjects were predominately white middle class. Children were asked to sort a set of television characters into human, animated, and puppet categories. They were also asked to explain how each differed from the other. Questionnaires were designed to determine the child's knowledge of the nature of cartoons and puppets. Results indicate that kindergartners had difficulty in discriminating among the three types of characters. They also seemed uncertain about the mechanics of television, and this affected their perceptions about the reality of television. These children did not seem to understand how characters "got inside of TV," believing that "people are made smaller than us; they're lowered down by a rope." Older children, about one-fourth of the second and third graders, were misinformed about how cartoon characters were made. Although these children had difficulty understanding animation, they could discriminate among three groups. Hirshman (1977) also found in her thesis with 20 5–6–7–year-olds that many of them were having difficulty understanding how "characters got into the television set." Some thought they entered through the plug in the wall.

For reasons cited in the above studies, a curriculum designed to teach elementary school children about television was developed by Singer et al. (1980). Part of the curriculum deals with the camera effects, process of animation, and special effects used to create fantasy on television. Results indicate that elementary school children who were taught how to understand the mechanics of television as well as how to become critical thinkers performed significantly better on measures of their television knowledge than a control group. It seems important to teach children about television, especially since research suggests that confusions about reality-fantasy exists in the early elementary school-age group.

Reeves and Greenberg (1977), studying third, fifth, and seventh graders, attempted to understand how children differentiate between pairs of popular television characters. In their sample of 14 popular television characters, only 2 cartoon or puppet characters were used. Children in the study stressed such characteristics as humor, strength of characters, attractiveness, and activity level. They were asked to rate "how much like a real person" each character was, but this dimension, "real-unreal," was infrequently used by the subjects to identify the differences between the characters. In another study, Greenberg and Reeves (1976) found that third, fourth, fifth, and sixth graders were more likely to name specific characters as real but had more difficulty perceiving the general category of "people on TV" as realistic. Similarly, Singer et al. (1980) found third, fourth, and fifth grade children had difficulty with the notion of "realistic" characters such as "Fonz" and "Mary Richards," confusing their real names with those of the character they portrayed. Work by Lyle and Hoffman (1972) and by Leifer et al. (1974) also suggests that younger children have difficulty discriminating what is real on television.

Research indicates that there is also some difficulty in interpretations of commercial messages. The exaggerated claims of specific product use have been studied by Ward et al. (1972), Ward and Wackman (1973), Ward et al. (1976), Robertson and Rossiter (1974), and Lewis and Lewis (1974), among many others. The findings support the notion that children about 7 years old in the concrete operations stage are better able to interpret the commercials than preschoolers. They generally do not accept all the presented information as factual except in areas of health-related messages (Lewis and Lewis 1974). Blatt et al. (1972) found that fourth and sixth grade children understand the reality or nonreality of characters and situations on commercials, but kindergartners and second-graders had difficulty with the reality-nonreality distinction. The fantasy elements in commercials and their effect on the imagination of children, however, are areas that have been scarcely studied.

Camera effects, such as zooms, split screen, wipes, use of chroma-key, and special effects, such as slow motion, fast motion, and ripple effects, may confuse children and interfere with their understanding of reality versus fantasy. Susman (1978) investigated the effects of camera zooms and verbal labels on children's visual attention to a television program of a prosocial nature. Preschool children, 40 boys and 40 girls (median age 4.3), were randomly assigned to watch one of five versions of a videotape using 4- to 7-year-olds as actor contestants, while an adolescent played the role of master of ceremonies. Results indicate that noncontent aspects such as the zoom influenced selective attention. Program preference or content was less influential. The zoom shots interfered with processing part-whole relationships in these preschoolers. Auditory features distracted children from competing stimuli and focused their attention on visual images. Thus, attention was higher when camera zooms were absent, and attention was lower in the camera-zoom-alone condition than in other groups.

Similarly, Salomon (1977) suggests that the television medium addresses itself to particular mental skills and benefits learners of different aptitudes. Depending on the nature of the dominant format used (concreteness of message, level of shot, level of sequence, and variability of correlated messages), knowledge acquisition is mediated by different skills.

Intrigued by the effects of the formal features of television on a child's behavior, Huston-Stein and Wright (in press) have been systematically studying which features gain and hold a child's attention and what effects these features have on a child's developmental changes relating to attention. These researchers suggest that form and content can influence arousal as well as serve as models for behavior. Of particular importance is the strong support they found for the notion that arousing forms such as high levels of action and pace led to increases of aggression. It would be interesting to see which formal features lead to gains in imagination. For example, would music, sound effects, peculiar voices, nonspeech vocalizations, visual effects such as zooms, pans, and split screens enhance imaginative play? What effects would scenery, costumes, themes, or auditory events have on a child's imagination? The work on attention would be fruitful if carried a step further, then, to examine the effects of these formal properties on a child's capacity to engage in symbolic play.

Work by Stein and Friedrich (1975) and Singer and Singer (1976) suggests that the slow-pacing, gentle quality of *Mister Rogers' Neighborhood* resulted in changes in children's cooperation. In addition, Tower et al. (1979) found gains in children's imagination as a result of viewing Mister Rogers' program. The emphasis on careful camera work, especially the intelligent use of the zoom shot to slowly focus in on an object, helps a child to understand how the enlarged object fits into its contextual setting. The clear distinction Mister Rogers makes between reality and fantasy through the device of the "trolley" entering a magical kingdom also helps children understand the notion of "make-believe."

If television appears in a town where previously there had been no television, would this medium have an effect on a child's imagination, and would distortions of reality ensue? Research by Williams (1978) and her colleagues implies that television has produced "massive disruption in the life-styles of parents and children" (p. 5). Children declined in reading of comic books; it may be that some of the fantasy enjoyment of comic books was found on television, perhaps through cartoons and superhero shows. Many of the children believed that television "makes life more interesting and fun." One of the community activities that showed a marked decrease after the introduction of television was sports. Williams does not report data on whether or not children's view of reality has changed because of television.

Gerbner et al. (1976, 1977), using a questionnaire with school children, report that heavy viewers of television distort the numbers of people they believe are involved in violence and the numbers of people who commit serious crimes.

When 208 children, ranging in age from 7 to 17, in Alaska were interviewed, "spooky" and "scary" shows were named as least liked (Forbes and Lonner 1980), while top choices were *Charlie's Angels* and *Happy Days*. When the children were asked to identify the theme of either *Charlie's Angels* or *Hawaii Five-O* (another frequently watched program), only 40 percent could identify the theme. Ability to identify a theme, rather than isolated actions, improved with age. The authors found that even older children (age 14 years and older) had difficulty with naming themes, and only about 50 percent could do so. Discrete scenes were recalled, but the children had trouble understanding the causal events or sequences. This has serious implications in terms of children's understanding of motives and the consequences of violent action. Forbes and Lonner state that "isolated and/or culturally different children will be more vulnerable to the effects of viewing violence than are urban, majority children" (p. 13).

In a task requiring them to differentiate real programs, such as news or sports events, from fictionalized specials, such as *Roots* or *Backstairs at the White House*, or fictional or fantasy programs, such as *Charlie's Angels* or *All in the Family*, 30 percent of all the children could name "real" programs. When Eskimo children were compared with children in southeastern Alaskan villages, Eskimo children were less likely to name fictionalized specials as real and more likely to name fantasy or fiction. One problem with Forbes and Lonner's categories seems to be the grouping of *All in the Family* as fantasy when it may be more appropriate to label it as realistic. Fantasy might better be reserved for *Wonder Woman* or *The Incredible Hulk* category.

Collins et al. (1978) examined second, fifth, and eighth graders' comprehension of edited versions of an action-adventure television program. Second graders recalled substantially less than fifth and eighth graders. They also made more incorrect inferences about relations among explicitly portrayed events than did older viewers. This comprehension difficulty among younger children may be in part attributed to their unfamiliarity with types of characters and settings that are generally used in adult, prime time programs.

The distortions that children make concerning plotline and naming the genre of program (realistic, fantasy, real) suggest again the need for television literacy courses in the schools. Certainly as more nations increase their television usage and continue to import more American television, the confusion and distortions will only increase among children. For example, Faulkner (1975) found that Asian adolescent girls, living in a protected environment in England which prevented their contact with English girls, tended to believe that English families were like those portrayed on television rather than to use more objective criteria. Obviously, television influences one's perceptions of reality. At what age, then, will a child learn the conventions such as "voice over," the cues that lighting and music add for suspense, the camera shots that create illusions, or the subtle cues that convey time has passed? It seems important for adults to play an active role in helping children understand the limitations of television. The next section describes some intervention studies, including our studies at the Family Television Research and Consultation Center of Yale University.

Adult Intervention and Mediation

Can television as a modeling device lead to imitation of events that could be deferred and later brought into a child's make-believe game? Can mediation produce changes in a child's behavior? Adults can explain program content during or after television viewing. They can also use material drawn from television programs in the form of games or stories to reinforce ideas presented on a program. Would mediation counteract any negative effects derived from television?

Using techniques which emphasize play and fantasy with children has proved to be effective in terms of increasing children's cognitive skills (Dansky 1976; Franklin 1975; Smilansky 1978; Freyberg 1973; Fink 1976). Saltz et al. (1977) also have trained preschoolers in fantasy activities. Results indicate that fantasy play facilitates cognitive development. The general design of these experiments was to expose children to a model who taught the children to play games or presented strategies that they could incorporate into their own play repertoire and then generalize to learning situations. One complaint about *Sesame Street* is that the child may be learning by rote and not learning strategies to solve tasks (Reeves 1970). Reeves feels that television should model strategies or ways of approaching a problem and ways to sustain an image. Television producers might explore techniques such as those proposed by Reeves (1970). To help children understand the process of conceptual thinking, split-screen techniques might be employed. While a character is solving a matching problem such as sorting colors, the reasoning process could be concretely depicted overhead. This imaging could then help children develop their own internal strategies.

Meichenbaum and Turk (1972) have suggested using models on children's programs such as *Sesame Street* to train children to self-generate strategies and produce mediators to control nonverbal and interpersonal behaviors, such as "a) self-instructions, self-reinforcement, scanning strategies; b) cognitive styles of reflectivity, creativity, ways of coping with failure and delays of gratification; c) interpersonal behaviors such as altruism and cooperation, and d) parent-child interaction." Research by Meichenbaum and Goodman (1971) used self-instructional procedures to teach impulsive children to develop self-control by teaching them to talk to themselves, aloud at first and covertly later.

Smilansky's pioneer study (1978) demonstrated that children of lower socioeconomic status could improve vocabulary, cooperation, and imagination through play training. Hitchings (1976) demonstrated that an increase in children's ability to write more imaginative stories could be made through their participation in imagination-training sessions. The experimental group of third graders received training in exercises involving self-expression, role playing, fantasy stories, plays, and skits. Although the gains made by the experimental group were not significant as compared to the control group, there was a trend toward significance ($t=1.33$, $p<.10$). In another study, in only nine teaching sessions, Feitelson (1972) was able to significantly increase the imaginative play behavior of nursery school children.

Using some of the modeling techniques that were tried out in experimental studies that did not involve television, Singer and Singer (1976*a*) designed an experiment to determine if television could enhance a child's imagination. Children were randomly assigned to one of four conditions: exposure to a model who taught make-believe games; exposure to *Mister Rogers'* program with a mediator interpreting events and directing children to focus on elements in the film; exposure to *Mister Rogers* but with no mediating influences; and a control group who received no treatment. Ratings were made on the children's imagination as well as on 13 other variables during free play before the experiment began; and scores were also derived from two tests of imagination. After 2 weeks of the experiment and 10 sessions of training, data again were collected on imagination and on the other variables through direct observation in the nursery school by trained independent raters for two free-play periods per child. Results indicated that children exposed to the model made significant increases in imagination, followed by children who were in the mediator television condition. Slight gains were made in the "television alone" condition, while a decrease in imagination was found for children receiving no treatment.

Friedrich and Stein (1975) also found gains in 3- to 5-year-old children's imagination after exposure to *Mister Rogers'* program. The experimental condition involving prosocial television (*Mister Rogers*), related play materials, teacher training and involvement produced the most consistent effects on both positive social interaction with peers and imaginative play.

At the Yale University Family Television Research and Consultation Center, several projects were devoted to assess intervention techniques used by teachers and by parents to enhance imagination. In one study (Singer and Singer 1980), parents of 141 middle-class preschool children were randomly assigned to one of four conditions, imaginative training, cognitive training, television information, and no treatment. They attended four sessions and received supplementary materials over 1-year's time pertaining to their specific training method. Each parent received a complete manual at the end of the year containing all materials relating to the three intervention techniques. Parents kept records of their children's television viewing for 2-week periods four times throughout the year. Children were observed during free play 8 times over the year and rated on 14 variables. Results of the intervention suggest that imaginative and cognitive training yielded increases in the spontaneous imaginative play of the children.

The following year, a similar study was carried out with 200 lower-class preschoolers to (1) study the effects of television on these preschoolers and (2) see if lesson plans derived from television programs could increase a child's cognitive, social, and imaginative functioning. Only 2- or 3-minute preselected segments were used in the classroom over 1-year's time in varying conditions to determine the efficacy of such a curriculum.

Children were randomly assigned to one of the following: television exposure and teacher reinforcement of the television concept; teacher reinforcement of the concept but no television; and ordinary school curriculum. Thirty lessons were used; they dealt with imaginative, cognitive, and prosocial material, such as sharing and taking turns, and emotions, such as empathy, feelings of failure, and need for love. Teachers were trained before the experiment in the use of the lesson plans and had ongoing inservice training and feedback sessions during the experiment. Half of the parents in each of the three conditions also attended workshops where the material in the lessons was discussed and where they were given many ideas and suggestions for imaginative play.

Parents were also informed about television research and given guidelines for their children's viewing. It was hoped that this intervention with parents would lead to changes in children's television-viewing habits and that parents would learn to generalize from the materials to other facets of their children's lives. Parents were encouraged to contribute to a newsletter, to make TV Toy Kits for their children's use when they watched television, and to share their experiences at each meeting. Workshops were held twice a month during the first phase of the experiment and then monthly thereafter, resulting in 10 sessions over the year. The following points emerge from the experience of conducting this elaborate intervention effort:

1. The experimental design, however elegant, was perhaps excessively cumbersome for application to so many children from a variety of nursery schools, in many cases under difficult conditions because of inadequate physical settings and the problems of transportation of television recorders and monitors to so many settings around the city.
2. Teachers welcomed the lesson plans. Inservice training of teachers was well received and reasonably effective. Further analyses of teacher effectiveness in presenting the materials are currently underway.
3. Parent meetings were poorly attended despite massive general publicity, personal phone calls, etc. The persisting difficulties (reported in many studies of disadvantaged urban families) in obtaining regular parental attendance severely limited the usefulness of this phase of intervention.The small minority of parents who did attend were eager and enthusiastic about the training, but their numbers are too few to allow more than qualitative evaluation of this phase of the research.

An examination of directionality patterns suggests that, when television and lessons were combined and especially when parents came to meetings, the intervention groups showed gains in imagination, interaction with peers, cooperation with peers, leadership, and a reduction in aggression in the classroom. More refined analyses are pending, but it can be concluded that a complex intervention of the type we carried out under very controlled conditions is not suitable for this age group or population.

In another study, we attempted to assess a new television program to see if a format involving educational aspects as well as entertainment could lead to some cognitive gains in 60 nursery school children. We used two different schools for this project, both middle class, in different sections of Connecticut. Children were pretested on general information and on ideas presented in the television series. Parents kept records of the children's viewing habits and filled out a television information form regarding television habits, favorite programs, whether or not they controlled their child's viewing time, their buying preferences with respect to books, records, toys. One group of children, the control group, watched videotapes of children's stories which were neutral in prosocial content. Another group watched the special program, and a third group watched the special program but had a followup discussion with activities directed by the teacher.

Results indicate that the children who watched the special program and had a followup lesson with the teacher made significant increases in their concept knowledge at the post-testing. This suggests that good programing is more effective when there is adult interaction or mediation in conjunction with the program. The adult serves to explain, expand, or clarify information for preschoolers (Singer et al. 1979).

Finally, we developed a curriculum to teach third, fourth, and fifth grade children information about television. Approximately 230 children were involved in this study, representing 82 percent of children enrolled in these grades in two Connecticut schools. The children were middle class, with an average IQ of 110 and a reading-grade level of 5.6. These children, although atypical in the amount of television viewing time each week (15 hours compared to the national norm of 20–30 hours for this age group), had program choices that followed the national trend.

Lessons were designed to teach the children the different types of programs; to understand the difference between reality and fantasy on television; to understand special effects; to learn about commercials; to learn how television works; to understand how television influences our ideas and feelings; to understand how television presents violence; and to encourage children to control their viewing habits. Teachers were given training in the use of the written materials. In addition, television tapes were produced which highlighted points made in each lesson. The lessons were designed to use language arts skills, such as reading, punctuation, analogies, critical thinking, and summary skills. Parents attended four workshops where we explained the lessons to them and gave them material related to television (Singer et al. 1980).

Teachers in both the experimental and control schools attended workshops just prior to each school's introduction of the lessons. In this experiment, we had two opportunities to fieldtest the curriculum. After we taught the lessons to the experimental school and posttest data were collected, we taught the lessons about 2 months later to the control school after pretesting these children again. We were also able to test the children's knowledge 2 months after the experiment ended in each school to determine any lasting effects of the curriculum.

Briefly, results indicated that children in the experimental school showed a greater increase in knowledge than children in the control school *before* the control school received the curriculum. Differences were most impressive in the measures of knowledge and understanding of special effects, commercials, and advertising. They understood how television characters could "disappear," what advertising techniques were used to enhance products, who pays for television programs, where to write letters regarding programs or commercials. They also learned vocabulary words related to television and could identify camera techniques and effects, such as dissolve, edit, zoom, cuts, (Singer et al. 1980).

Children learned how to distinguish between real people, realistic people, and fantasy figures. The lessons were successful, too, in helping children understand that violence on television programs is not real. Samples of written work demonstrated that children could write imaginative scripts for programs and for commercials.

The use of television for positive cognitive, social, and emotional effects is still in the pioneering stage. The reaction of millions of people to *Roots* or to *The Holocaust* suggests the positive potential of creative television programing. Too much emphasis has been placed on the negative effects of television.

Conclusions and Implications

Television by its very nature is a medium that emphasizes those elements that are found in imagination, visual fluidity, time and space flexibility, and make-believe. One might expect it to stimulate children's imaginations and also to serve a constructive role in socialization. Very little systematic attention has been paid to the constructive potential of the medium in contrast to the extensive work on aggression or sex roles and stereotyping. What data emerge for very young children suggest that television viewing seems to preempt self-play time and may impede creativity. Yet there are indications that, with adult intervention, television can be used to stimulate spontaneous imaginative play in children as well as other prosocial behavior. There has been little effort by producers or educators to develop age-specific programing designed carefully to enhance an interactive, self-generating playfulness in children. The *Mister Rogers' Neighborhood* show is one of the few that strives for such an effect with preschoolers. Available data suggest that special materials designed to complement adult intervention at home or school can help children develop imaginative and language skills and can also be useful in clarifying reality-fantasy distinctions with relation to television.

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Television Viewing and Arousal

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American television has often been characterized as the Nation's favorite unwinder. Indeed, surveys probing viewers' motives for watching television (e.g., Bower 1973) tend to confirm that consumption of television entertainment is primarily ascribed to a need for relaxation. Apparently, many viewers feel that television's entertainment fare can help them to calm down after the stressful, often aggravating activities of daily life. Television, then, is often viewed as an antidote to the rousing "fight for survival" in society. The surveys also reveal that viewers attribute their consumption of entertainment fare to an urge for excitement. Many apparently seek to overcome an uneventful, dull, and boring state of affairs by exposing themselves to television's diversionary stimulation in hopes of being aroused.

There is, of course, no contradiction in the claim that the utility of television—television entertainment, in particular—may be twofold as far as states of excitement are concerned. Some people may use television predominantly to reduce unpleasant states of excitement; others may use it to generate or increase pleasant states of excitement. Moreover, the same people, though at different times, may use television in either one of the two principal ways, depending upon prevailing experiential conditions of excitedness. Regardless of the particular effect on a state of excitement, however, it is apparently held, by viewers and media analysts alike, that television can profoundly influence the viewer's arousal state and, hence, affective and emotional behavior.

But, despite ample speculation on the function of arousal by media analysts and despite the study of viewers' pertinent introspective accounts (insightful and suggestive as both approaches may be), research on the actual effects of exposure to television fare on arousal and on the consequences of these effects on subsequent behavior has only recently been conducted and is scarce by any standard. Only recently have new conceptualizations of arousal and theories based on these conceptualizations become available. And only recently have the techniques of measuring bodily arousal states been simplified to the point where they can be widely used with sufficient reliability. As a result of these developments, research on the function of arousal, especially in the context of exposure to communication, has been greatly stimulated and has taken new directions. Little by little, the effects of exposure to television fare on arousal and the consequences of these effects are being empirically ascertained; and principal arousal processes are being theoretically integrated and understood—sometimes confirming earlier speculations, sometimes contradicting them.

Since the new theoretical approaches to arousal, affect, and emotion are critical in understanding the progress in research on the role of excitatory phenomena in television's effects, we will briefly introduce the conceptualization and measurement of arousal. Thereafter, we will discuss theoretical models of the function of arousal in the context of television and discuss the research evidence pertaining to them.

Arousal Conceptualized

In behavior theory (e.g., Hull 1943, 1952; Spence 1956; Brown 1961), in activation theory (e.g., Duffy 1962; Lindsley 1951, 1957), and in emotion theory (e.g., Schachter 1964; Zillmann 1978), arousal has been conceived of as a *unitary force that energizes or intensifies behavior that receives direction by independent means.* Hebb (1955) succinctly expressed this conceptualization: Arousal (or drive) "is an energizer, but not a guide; an engine but not a steering gear" (p. 249). Behavior theory, in particular, has been most influential in promoting the view that arousal directly energizes the behavior that is prepotent in the habit structure or, expressed in more practical terms, that it energizes any and every behavior a person comes to perform for whatever reason (Tannenbaum 1972). More recently, however, the view of a universal one-to-one correspondence between arousal and behavior intensity had to be abandoned (e.g., Zillmann and Bryant 1974; Cantor et al. 1975; Bryant and Zillmann 1979), and limiting conditions had to be specified (Zillmann 1978, 1979). Nonetheless, within certain confines, arousal has continued to be viewed as a unitary force that intensifies motivated behavior under most circumstances.

But while there has been little disagreement on the energizing function of arousal, arousal as such has been conceived of differently in the various theoretical approaches. In behavior theory, arousal was synonymous with drive (e.g., Brown 1961), and drive, as a universal energizer, was a hypothetical construct and an intervening variable (e.g., Hull 1952). Activation theory focused on activities in the brainstem reticular formation; and states ranging from coma through deep sleep, light sleep, drowsiness, relaxed wakefulness, and alert attentiveness to strong, excited emotions became measurable in characteristic wave patterns and rhythms in the encephalogram (e.g., Lindsley 1951). The so-called peripheral theories of emotion (e.g., James 1884; Lange 1887) promoted an interest in the assessment of all conceivable bodily manifestations of arousal, especially visceral changes (cf. Dunbar 1939). Oddly enough, the criticism of these theories by Cannon (1927, 1929) brought much clarity to the conceptualization of arousal—in both peripheral and central theories (e.g., Bard 1934; Papez 1937; MacLean 1949). In his well-known fight-or-flight paradigm, Cannon implicated sympathetic dominance in the autonomic nervous system with the function of providing the organism with the energy for the vigorous action of attack or escape. This energization is a critical concomitant of most emotional behaviors and is readily measurable in numerous peripheral manifestations. Recent theories of affect and emotion (Schachter 1964; Leventhal 1974; Izard 1977; Zillmann 1978) follow Cannon in conceiving of arousal mainly in terms of sympathetic activity in the organism.

It should be clear, then, that in the different approaches to arousal in which arousal is actually measured, arousal had been operationalized in substantially different ways. Activation theory concentrated on assessing the excitatory consequences of the diffuse projection from the reticular formation to the cortex (Moruzzi and Magoun 1949), whereas theories of emotion focused on activity in the autonomic nervous system throughout the body, selecting a great many manifestations of excitatory processes for assessment (cf. Grings and Dawson 1978).

Usually, there is a high degree of correlation in the activity in the reticular formation and the autonomic nervous system. The function of arousal in these structures, however, can be viewed as markedly different. In fact, in recent theory, the two systems have been treated as being relatively autonomous; this is mainly because of functional differences and despite many acknowledged interdependencies. Routtenberg (1968, 1971), for instance, distinguished between two arousal systems: System I is the reticular activating system; this structure is viewed as the primary apparatus for producing cortical arousal and for controlling sensory gating and response organization. System II, in contrast, subsumes activity in various limbic structures and is held responsible for basic vegetative processes, i.e., all emotions, regardless of hedonic considerations.

Routtenberg's distinction between "cortical" and "limbic" arousal—which, because of the high degree of correspondence between "limbic" and "autonomic" arousal, we shall refer to as a distinction between "cortical" and "autonomic" arousal—appears to be a useful one, especially with regard to research on the effects of television. It separates arousal processes that serve attention, perception, and response preparation from those associated with affective and emotional reactions, and it thereby helps prevent much confusion. Although certain critical interdependencies must be recognized at all times, it appears to be advantageous to explore the implications of cortical and autonomic arousal independently in studying television behavior. Clearly, the realm of the former type of arousal is research on attention, alertness, and vigilance on the one hand, and information processing, acquisition, and retrieval on the other; the realm of the second type is anything pertaining to emotional behavior that is stirred up or altered during or following exposure.

Measurement of Arousal

Cortical arousal usually is measured in alpha wave blocking as recorded in the electroencephalogram. In research on television effects, however, this measurement technique does not have a tradition; and for all practical purposes, cortical arousal is treated as a hypothetical construct.

In contrast, autonomic arousal has been measured in numerous peripheral manifestations. Commonly used indices are systolic and diastolic blood pressure, heart rate, vasoconstriction (usually measured in skin temperature decrease), and skin conductance (cf. Buck 1976). Of these measures, heart rate has produced the least reliable results (cf. Zillmann 1979), presumably because of its "paradoxical" involvement in the orienting reponse (cf. Grings and Dawson 1978).

Television as the Unwinder

It is well documented (e.g., Selye 1956; Appley and Trumbull 1967; Levi 1967)—in fact, it can be considered a cliché—that everyday life, especially the competitive work in most job situations, is highly stressful. A large portion of society's adult population should consequently be motivated to seek relief from labor-associated stress as the typical workday draws to a close. As workers return to their homes, the need for diversionary stimulation that could bring relief should be at a maximum; and, as the peak consumption in this "prime time" indicates (e.g., Bower 1973), television is certainly a major leisure activity to which people turn at this critical time. But is it because television offers relief from stress?

In terms of arousal considerations, the prediction of relief that can be obtained from exposure to television fare is straightforward. The person who returns from a day of labor uptight, if not upset, maintains an inappropriately high level of arousal. Endocrinological research (e.g., Levi 1964, 1967) leaves no doubt about that. Also, it appears to be clear that the condition most conducive to maintaining arousal at a high level is a psychological one: It is the continued cognitive preoccupation with the events responsible for the experience of stress. Any disruption of this rumination (cf. Bandura 1965, 1973) or rehearsal process (cf. Zillmann 1979), potentially through any form of distracting stimulation, should have the beneficial effect of reducing arousal, thereby providing the experience of relief (cf. Novaco 1979).

Watching television is not the only means of disrupting stress-maintaining rehearsal processes. Gardening, needlepoint, or puzzles (cf. Konečni 1975) can also reduce feelings of tension and annoyance. Watching television appears to be an effective means of providing relief from stress, however. Watching television, because of the wealth of diversionary stimuli offered, is likely to involve and absorb the ruminating person more effectively than many alternative activities.

Lacking acceptable research evidence, a meaningful comparison between the stress-alleviating effect of watching television and that of alternative leisure activities cannot be made. The evidence at hand allows, however, an assessment of the potential for stress alleviation of various types of television contents and programs—entertainment fare, in particular. In fact, the available evidence unambiguously supports a simple theoretical model. This model applies to alternative activities as well.

The model originated in media violence research (Zillmann and Johnson 1973), and it presents the effect of an annoyed individual's exposure to communication on level of arousal, the experience of annoyance, and hostile behavior as a function of the communication's *intervention potential*. This intervention potential is, of course, the communication's capacity to involve a person and thereby disrupt the maintenance of arousal through the rehearsal of grievances and related thoughts of coping and retaliating. As a point of departure from earlier positions, which simply concentrated on a communication's interest value, the capacity to intervene in ongoing cognitive processes is viewed as deriving from two factors: (1) the communication's potential to absorb the respondent regardless of particular experiential states, and (2) the communication's relationship to salient aspects of the respondent's state of stress or distress. It is suggested that *"contents that relate to the individual's acute emotional state potentially reiterate arousal-maintaining cognitions"* (Zillmann 1979, p. 321) and that, therefore, such messages, which may under different circumstances prove highly absorbing, will do little to calm the individual. Applied to provocation and retaliation, this reasoning leads to the prediction that the acutely annoyed person's exposure to communications that feature the provocation and torment of others is unlikely to take that person's mind off the circumstances of his or her own annoyance, making it unlikely, in turn, that levels of arousal associated with the annoyance will be effectively reduced. Materials that do not relate to provocation and/or retaliation, in contrast, should readily cut into the rehearsal process, initiate the decay of arousal, and bring on the experience of relief.

The initial test of this reasoning (Zillmann and Johnson 1973) produced supportive data: Annoyed adults' exposure to violent fare failed to reduce level of arousal and, hence, aggressive behavior, whereas exposure to nonviolent, neutral fare effectively lowered both level of arousal and aggressiveness. These findings, which have been fully replicated in a more recent investigation by Donnerstein et al. (1976), show that, compared with a no-exposure control treatment, exposure to media violence tends to perpetuate—but not to heighten—an existing propensity for aggression. They also show that, compared with this control, it is the so-called "neutral" treatment that, because it accomplishes the diminution of arousal, reduces motivated aggressive behavior. The findings, then, show it to be inappropriate to interpret the finding of relatively higher aggressiveness after exposure to violent fare than after exposure to neutral fare as the result of aggression-facilitating powers of media violence (cf. Berkowitz 1965; Goranson 1970; Geen 1976). Rather, exposure to absorbing fare, unrelated to the viewer's affective state, proves to have the beneficial effect of soothing the irritated person, thereby helping to control antisocial reactions.

Bryant and Zillmann (1977) carried further the search for communication conditions with such beneficial effects. Specifically, these investigators tested the proposal that, among stimuli that are equally unrelated to the individual's affective state, diminution of preexposure arousal should be proportional to the communication's capacity to involve, absorb, and intervene in arousal-maintaining cognitive processes. In their investigation, numerous stimuli, some of which were specially created, were pretested for intervention potential. This potential was behaviorally measured (1) in the frequency of errors made on a simple tactile task during exposure (with the greater number of errors indicating greater involvement with the message) and (2) in the recall performance on materials presented prior to exposure (with the poorer performance indicating greater involvement with the message). One violence-laden program was included. The pretest showed that the communications' intervention potential varied substantially from extremely low to very high. In the main experiment, adult subjects were provoked, exposed to one of the communications, and then provided with an opportunity to retaliate against their annoyer. Arousal was measured at various times, including immediately prior to and immediately after exposure to the communication.

The findings, displayed in figure 1, leave no doubt about the fact that, as has been proposed, the dissipation of annoyance-associated arousal—and along with it, the diminution of the propensity for antisocial behavior—is proportional to the intervention potential of communications, as long as these communications are unrelated to annoyance. But the findings show just as convincingly that this relationship does not hold true when the contents of a communication relate to the individual's affective state. The violence-laden program, although highly absorbing to unprovoked persons, clearly failed to effect a reduction in arousal and, hence, a reduction in aggressiveness. Its effect on arousal and aggressiveness was comparable to that of an entirely uninvolving, monotonous stimulus.

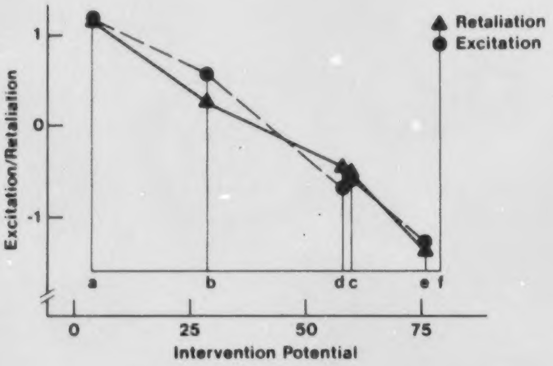

Figure 1. Level of excitation and retaliatory behavior as a function of the intervention potential of communications. The greater the capacity of nonhostile contents to absorb the respondent (points connected by gradients), the greater the recovery from annoyance-produced excitation (circles) and the less severe the postexposure retaliation against the annoyer (triangles). Contents featuring hostilities were absorbing to the nonannoyed subjects but failed to induce efficient recovery from excitation and failed to lower the level of retaliatory behavior in annoyed subjects (isolated points on coordinate f). The communications were: (a) a monotonous stimulus, (b) a nature film, (c) a comedy show, (d) a program featuring nonaggressive sport, (e) a quiz show, and (f) a program featuring contact sport entailing aggressive actions beyond the legitimate sports activity. Excitation and retaliation are expressed in *z* scores for ease of comparison. (From Zillmann 1979; copyright 1979 by Lawrence Erlbaum Assoc.)

Concentrating on the consequences of communication exposure on arousal, and treating the experience of annoyance produced by provocation as representative of annoyance generally, even of relatively unfocused feelings of tension, the available research evidence permits the following generalizations:

1. Exposure to communication, especially to entertainment fare, is likely to disrupt rehearsal processes that would perpetuate states of elevated arousal associated with negative affective experiences. Exposure is thus likely to produce feelings of relief.
2. A communication's capacity to effect a diminution of arousal associated with negative affect and to bring on the experience of relief is proportional to its capacity to involve and absorb the individual, as long as the affinity between the individual's affective state and the events featured is minimal.
3. Contents likely to reinstate a negative affective experience tend to prevent the dissipation of arousal, thus perpetuating an aversive experience.

It should be added that, for reasons yet to be detailed, exposure to highly arousing materials (e.g., erotica, thrillers, athletic contests, disturbing news reports) is also unlikely to initiate the decay of arousal and bring feelings of relief. On the other hand, there is growing evidence that particularly pleasant stimuli, relatively independent of how absorbing they may or may not be, can effectively reduce initially elevated arousal (e.g., Donnerstein et al. 1975; Baron 1977; Zillmann and Sapolsky 1977).

It can be argued, of course, that the function of television as an unwinder is largely compromised by the fact that television offers many highly exciting materials, as well as programs capable of soothing a person in a state of acute stress. It seems that the person in need of unwinding is as likely to be exposed to arousing as to calming fare. Recent research on selective exposure (Zillmann et al. 1980; Medoff 1979) suggests, however, that acutely annoyed persons avoid exposure to materials likely to perpetuate their state of annoyance. It has been found, for example, that frustrated and insulted adults, both males and females, avoid comedy that features the insult and belittlement of others; these adults expose themselves, instead, to game shows and nonhostile comedy devoid of stimuli capable of reinstating their annoyance. Aroused persons, then, appear to select television fare—seemingly "intuitively" but more likely because of past experiences of relief—that holds promise of reducing level of arousal and, thereby, the intensity of associated negative affective experiences.

Television for Excitement

There can be no doubt that exposure to television can be highly arousing (i.e., create a sympathetic dominance in the autonomic nervous system, in particular) and that this arousal can foster affective reactions of considerable intensity. Numerous investigations have shown that entertainment fare can greatly elevate the level of sympathetic excitation in the viewer. It has been demonstrated, for example, that suspenseful drama produces intense excitatory reactions in adults and children alike (cf. Zillmann 1980). Although, generally speaking, comedy need not be arousing and may actually be sedative under certain circumstances, the kind of comedy that creates true hilarity in adult audiences has been found to be highly arousing (e.g., Tannenbaum 1971). Endocrinological research by Levi (1965) and Carruthers and Taggart (1973) leads, in fact, to the conclusion that the excitatory reactions produced by exposure to highly amusing films are very similar to those produced by exposure to suspenseful, aggression-laden films. Televised athletic contests have also been shown to be capable of elevating level of arousal substantially (e.g., Bryant and Zillmann 1977). If there is a stimulus category that seems utterly devoid of the capability to effect appreciable increases in arousal, it is the typical nature film. This type of film has with great consistency been shown not only not to arouse viewers but to lower their level of arousal markedly (e.g., Wadeson et al. 1963; Levi 1965). On the other hand, the stimulus category that has the distinction of consistently producing the strongest excitatory reactions, at least in adult males, is that of explicit erotica. In addition to evoking genital reactions (e.g., Reifler et al. 1971), erotica that graphically feature precoital and coital behavior have been found to produce extreme elevations in sympathetic arousal in both males (e.g., Levi 1969; Zillmann 1971; Donnerstein and Hallam 1978) and females (e.g., Levi 1969; Cantor et al. 1978).

Outside the area of entertainment, little is known about the excitatory impact of television presentations. News reports on wars, natural disasters, tragic events such as plane crashes, or "bad news" about political happenings and the state of the economy may be assumed to foster reactions associated with substantial increases in arousal. But such assumptions, no matter how "conservative" they may seem, are without direct empirical support. There is, however, some research on the reality-fiction dichotomy that pertains to the issue. Investigations by Geen and Rakosky (1973) and Geen (1975) have shown that harm-inflicting actions believed to have actually happened are far more arousing (or perpetuate initially elevated levels of arousal for much longer periods of time) than the same actions believed to be fiction, suggesting that many news items may prove to be highly arousing indeed.

Granted that explicit erotica are not a part of the daily diet of contemporary television (at least, not yet), the research evidence leaves no doubt that a great variety of standard fare (from sitcoms and action drama to sports and the late-night horror show) is capable of inducing excitatory reactions of considerable intensity—at least occasionally. In accord with the so-called law of initial values, which proclaims that the magnitude of an excitatory reaction decreases as the level of initial arousal increases (cf. Wilder 1957; Sternbach 1966), it must, of course, be expected that arousal reactions are particularly strong in viewers who are initially relaxed or who are experiencing arousal near normal levels. Viewers who are already experiencing elevated levels of arousal are likely to experience a weaker excitatory reaction in response to the same stimuli (and obviously, viewers whose initial arousal is at a maximum cannot be further aroused).

Television's capacity to generate notable increments in autonomic arousal thus favors the relatively unaroused person. Viewers who are exhausted from repetitive daily work or who are simply bored with whatever they have been doing—not those who are tense and inclined to relax—are likely to find the diversionary stimulation that television offers particularly exciting; and, because of this (i.e., the past experience of excitement), they should be motivated to seek out exposure to such stimulating fare. This, at least, is what numerous theories lead us to expect.

The view that moderate increases in arousal (and television usually provides just those) are pleasurable, whereas extreme increases are aversive, has been entertained in one form or another for some time. Bain (1875/1859) and Wundt (1893) were among the first to promote it. More recently, Berlyne (1971) was its chief promoter. A variation of this view, whose main advocate has been McClelland (e.g., McClelland et al. 1953), posits that both increases and decreases in arousal are pleasurable when their magnitude is moderate, and both are aversive when it is extreme. Common to all these views is the assumption that either the level of arousal or a change in arousal can, by itself, determine the hedonic quality of a reaction (cf. Tannenbaum 1980). Up to a point, an experience, of which a certain level of arousal or a certain change in arousal is a concomitant, is said to be one of pleasure; and beyond this point (which usually is entirely hypothetical), the experience, regardless of other circumstances, converts into one of aversion.

The usefulness of this approach appears to be quite limited, essentially because of the neglect of those other circumstances. Obviously, it is not the proposition that extreme excitatory conditions can be aversive that needs to be challenged. Any truly extreme bodily condition constitutes an emergency which, presumably, constitutes a noxious experience. Rather, it is the fact that moderate changes in excitation that occur at intermediate levels of arousal can as readily be associated with noxious as with pleasant experiences (cf. Schachter 1964; Buck 1976; Zillmann 1978) that destroys the utility of the sole consideration of arousal levels and arousal changes. Although it may be useful to propose that persons strive for an optimal level of arousal (e.g., Duffy 1957) or seek to vary their experience (e.g., Fiske and Maddi 1961), it remains to be explained why some nonextreme excitatory reactions are concomitants of pleasure and others of aversion.

The pioneering work of Schachter (1964) made it abundantly clear that, in order to explain the diversity of affective and emotional behaviors with any degree of precision, it is imperative to consider cognitive processes along with excitatory reactions. Assuming that autonomic arousal is largely nonspecific, he proposed in his two-factor theory of emotion—essentially—that people attribute their excitatory reaction to the stimuli immediately present in their environment and use the interoceptive feedback from this excitatory reaction as an index of the intensity of their emotional response to the situation. Thus, the *kind of affect*, then, is considered *cognitively determined;* the *intensity of affect*, on the other hand, is considered *determined by the magnitude of the excitatory reaction*.

In the initial research on this two-factor model of affect and emotion, Schachter and Singer (1962) demonstrated that the artificial creation of arousal (injection of epinephrine believed to be a placebo) intensified both feelings of euphoria and dysphoria. The same arousal changes, then, were capable of producing hedonically opposite effects, depending on situational conditions and their interpretation. A simultaneously conducted study by Schachter and Wheeler (1962), which pertains to television more directly, showed that enjoyment of comedy could readily be manipulated by altering arousal considered to be evoked by it. Injection of an arousal-facilitator (epinephrine) intensified enjoyment; injection of an autonomic blocking agent (chlorpromazine) dampened it.

The two-factor approach appears to have great utility in explaining affective and emotional reactions to television's offerings. It readily accommodates any hedonic experience, and it covers all conceivable nuances of affect. Depending upon the viewer's cognitive appraisal of the events on the screen, he or she will be annoyed, angry, furious, sad, apprehensive, fearful, scared, terrified, satisfied, jubilant, joyous, repulsed, disgusted, amused, etc. Whatever the result of this appraisal, that is, whatever affect the viewer arrived at cognitively, the intensity of any feeling state is determined by the viewer's feedback from his or her concomitant excitatory reaction. Equally intense excitatory reactions can thus fuel, for example, sadness *or* joy, amusement *or* disgust. And, barring intolerably intense excitatory reactions, the intensity of affective reactions should increase with the magnitude of associated arousal reactions. The function of autonomic arousal, then, is not the determination of specific affective experiences but their intensification.

Considering both the law of initial values and two-factor theory, the following suggestions are possible:

1. Persons who experience low levels of arousal—because of monotonous environmental conditions, repetitive nonstrenuous tasks, or similarly unstimulating circumstances—are likely to respond more intensely than others to affect-inducing stimuli. To the extent that exposure to television fare fosters enjoyment and the magnitude of any evoked arousal fuels this enjoyment, persons who are initially rather unaroused can be expected to obtain comparatively great pleasure from watching television.
2. As the experience of comparatively great pleasure is repeated, a tendency to seek out this excitement should manifest itself through operant learning. Ultimately, initially rather unaroused persons should be drawn to watching television "for the excitement of it."

Nonspecificity of Arousal and Its Consequences

Although the cognitive determination of affect, as stressed in two-factor theory, is crucial to understanding the diversity of affective reactions that exposure to television is capable of evoking, two-factor theory is not without deficiencies. For one thing, it is an incomplete theory because it fails to account for the origination of the excitatory reaction that, once it has occurred, is said to foster a search for an explanation that results in the labeling of the "affective" reaction (cf. Zillmann 1978). Recent theorizing on affect and emotion is more complete in this regard (e.g., Zillmann 1978; Leventhal 1979); it also relies less on a presumed need to explain any excitatory reaction to oneself, which is a central part of the two-factor model. However, in looking at reactions to television fare specifically, the issue that must concern us most is that of "confusions" that may arise in the arousal-affect linkage because of the assumption of nonspecificity of autonomic arousal made in two-factor theory.

Although there is evidence that some emotions may be associated with somewhat specific excitatory reactions (cf. Sternbach 1966; Grings and Dawson 1976), the bulk of the evidence shows that more or less all emotions are fed by elevated sympathetic activity in the autonomic nervous system (cf. Schachter 1964; Kety 1970; Mandler 1975). Granted that the excitatory reactions associated with the various, conceivable affective states may vary slightly, a tremendous degree of overlap in excitatory patterns cannot be denied. Additionally, minor differences in excitatory reactivity may be lost in the comparatively insensitive interoceptive structures, so that for all practical purposes any feedback of an arousal state is nonspecific and only indexes its intensity.

Transfer of Excitation

The fact that autonomic arousal in the various emotions is largely nonspecific has significant behavioral consequences, especially when the time course of excitatory processes is considered and compared to that of cognitive adaptation to stimulus changes. A theoretical model in which this is done is the excitation-transfer paradigm (Zillmann 1971, 1978, 1979). In this paradigm, which is presented in figure 2, it is proposed that, because of the comparatively slow decay of autonomic arousal (owing to humoral processes involved) and the individual's capacity to re-cognize stimulus changes and to select an appropriate response quasi-instantaneously (owing to speedy neural transmission), residues of excitation from a preceding affective reaction will *combine* with excitation produced by subsequent affective stimulation and thereby cause an *overly intense* affective reaction to the subsequent stimulus. In simple terms, a person who is still aroused from something that happened a while ago, whatever it may have been, and who is now confronted with a situation that causes him or her to respond emotionally, should experience this emotion more intensely and also behave more intensely than he or she would without the presence of residual arousal from the earlier, possibly entirely unrelated arousing experience. Residual arousal from anger, then, may intensify fear; residues from fear may intensify sexual behaviors; residual sexual arousal may intensify aggressive responses; etc. The only condition that need be met is that a person not be cognizant of the fact that he or she is still aroused from an earlier experience (cf. Cantor et al. 1975).

The validity of the transfer paradigm has been demonstrated for a wide range of emotional experiences. It has been shown, for example, that residues of excitation from physical exertion can intensify feelings of anger and aggressive behavior (Zillmann et al. 1972; Zillmann and Bryant 1974) or the experience of sexual excitement (Cantor et al. 1975). It also has been shown that residues of sexual arousal can potentiate aggression (e.g., Zillmann 1971; Meyer 1972) and that residues from either sexual arousal or from disgust can facilitate such diverse experiences as the enjoyment of music (Cantor and Zillmann 1973), appreciation of humor (Cantor et al. 1974), and dysphoric empathy (Zillmann et al. 1974).

Transfer Effects After Exposure to Communication

Most experimental research on the consequences of exposure to television fare has concentrated on effects immediately after exposure. Effects of exposure to violence-laden programs on aggressive behaviors, for example, have characteristically been assessed during the immediate postexposure period (cf. Goranson 1970; Green 1976). Effects of exposure on prosocial behavior

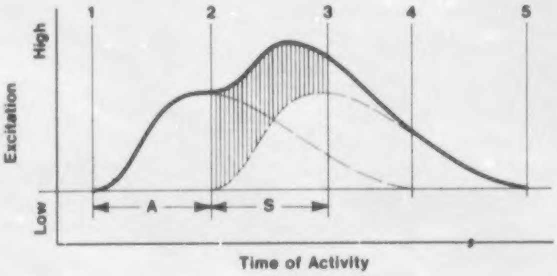

Figure 2. A model of excitation transfer in which residual excitation from a preceding excitatory reaction combines additively with the excitatory reaction to current stimulation. An antecedent stimulus condition (A), persisting from time 1 to time 2, is assumed to produce excitatory activity that has entirely decayed only at time 4. Similarly, a subsequent stimulus condition (S), persisting from time 2 to time 3, is assumed to produce excitatory activity that has entirely decayed only at time 5. Residual excitation from condition A and excitation specific to condition S combine from time 2 to time 4. The extent to which the transfer of residues from condition A increases the excitatory activity associated with condition S is shown in the shaded area. (From Zillmann 1979; copyright 1979 by Lawrence Erlbaum Assoc.)

(cf. Rushton 1979) and modeling effects generally (cf. Bandura 1965; Baron 1977) have been ascertained analogously. Also, in most of the research, any effects observed have been attributed to particular characteristics of the content of messages, such as specific aggressive cues (cf. Berkowitz 1965) or, more generally, the behavior of models (cf. Bandura 1965). The excitation-transfer paradigm makes it appear likely, however, that some of the effects reported in this type of research, especially in the work on media violence, are at least in part due to the excitatory effect of the messages—regardless of their particular contents.

In a first investigation designed to test this possibility (Zillmann 1971), male adults were provoked, exposed to a neutral, an aggressive, or an erotic film and then provided with an opportunity to retaliate against their annoyer. It had been determined in a pre-test that the neutral film was neither arousing nor aggressive, that the aggressive film was somewhat arousing, and that the erotic film was highly arousing yet entirely nonaggressive. Clearly, if aggressive cues are the critical mediators of exposure effects on motivated aggressive behavior, aggressiveness after exposure to the aggressive stimulus should be higher than after exposure to either one of the other stimuli. If, on the other hand, residual excitation from exposure to communication critically influences postexposure behavior, the intensity of aggressive reactions should be a simple function of the excitatory potential of the communications. The erotic film, consequently, should produce more aggressiveness than the aggressive film, which in turn should produce more than the neutral one. The findings, displayed in figure 3, confirmed the expectations based on the transfer model.

These findings have been corroborated and expanded in subsequent research (cf. Tannenbaum and Zillmann 1975). More recent research has extended the earlier work on males to females (e.g., Cantor et al. 1978; Baron 1979) and to mixed-sex situations (e.g., Donnerstein and Barrett 1978; Donnerstein and Hallam 1978), has explored the effects on aggressiveness of less common forms of pornography (e.g., White 1979; Zillmann et al. 1981), has confirmed arousal-effects of humor (e.g., Mueller and Donnerstein 1977), and has sought to further implicate residual arousal as a promoter of help-giving (cf. Mueller et al. 1977; Mueller and Donnerstein 1978, 1981). An investigation by Donnerstein et al. (1976) is noteworthy because it altered the typical sequence of events in the experimental procedure. Instead of interpolating exposure to communication between the motivation of a behavior and the opportunity to execute it, these investigators recorded transfer effects for aggression that was instigated after exposure to arousing materials (rather than beforehand).

Although the research on postexposure transfer is voluminous, it can readily be summarized:

1. It is well established that residual sympathetic excitation from exposure to communication can facilitate motivated affective behaviors.
2. Residual arousal potentially increases the likelihood and intensity of affective reactions. These reactions may be antisocial or prosocial (or nonsocial), depending upon prevailing social circumstances.
3. Stimuli capable of inducing excitatory reactions that are likely to exert some degree of influence on postexposure behavior come from numerous domains of communication content. Domains range from violence-laden programs to titillating sexual fare and hilarious comedy.
4. Since residual arousal is likely to dissipate within several minutes after exposure, transfer effects on postexposure behavior are comparatively short lived (cf. Zillmann et al. 1974; Day 1976).

Although it is conceivable that excitation transfer from exposure to television is involved in many impulsive antisocial actions (e.g., aroused by the events on the screen, a parent might strike his or her child on minimal provocation or be overly punitive when some corrective measure is indicated), it should be clear that transfer does not

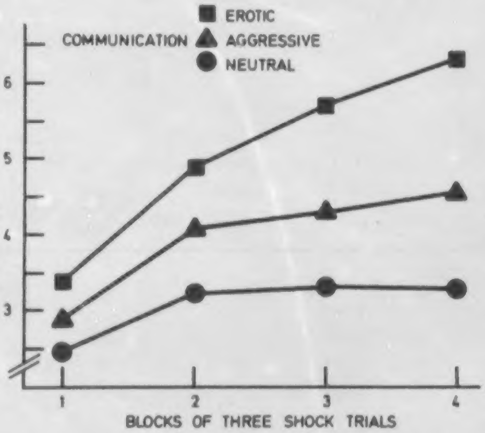

Figure 3. Retaliatory aggression as a function of the excitatory potential of communications. Exposure to communication was interpolated between provocation and retaliation. Excitation, measured in peripheral manifestations, was at a higher level after exposure to the erotic communication than after exposure to the aggressive communication and, in turn, at a higher level after exposure to the aggressive communication than after exposure to the neutral communication. (From Zillmann 1979; copyright 1979 by Lawrence Erlbaum Assoc.)

generally favor hostile or aggressive reactions. The research evidence suggests that antisocial behaviors must be motivated in order to be enhanced (e.g., Zillmann et al. 1972). Residual arousal is impartial to the kind of response it will intensify. If prosocial responses are motivated, it is likely to energize those responses (e.g., Mueller and Donnerstein 1981). Considerations of communication-induced arousal and of its effect on postexposure behavior, then, do not lead to the prediction of any unique ill effects.

Transfer Effects During Exposure to Communication

Although most of the communication research on excitation transfer has explored effects on behavior after exposure, several investigations have been conducted to establish that residual arousal from preexposure experiences likewise can influence affective reactions to communications. Enjoyment of rock music, for example, has been treated as an affective reaction, and it has been shown (Cantor and Zillmann 1973) that, under the appropriate circumstances for transfer, residual excitation from prior hedonically positive or negative experiences intensifies such enjoyment. Similarly, both enjoyment of humor (Cantor et al. 1974) and empathetic distress occasioned by witnessing a liked protagonist suffer an unfortunate fate (Zillmann et al. 1974) have been found to be intensified by residual arousal, regardless of the hedonic valence of the prior experience from which it derived.

More recently, the transfer paradigm has been applied to interdependencies among affective reactions that are elicited during exposure to entertaining communications. The phenomenon of suspense, in particular, has been investigated both in fiction (Zillmann 1980) and in athletic contests (Zillmann et al. 1979). Much attention has been given to the dispositional conditions responsible for the viewer's experience of empathetic distress during periods of acute suspense (i.e., the affective disturbance suffered while a liked protagonist is in peril or a favored competitor or team seems headed for defeat). However, of greater significance here is the "winning formula" for suspenseful drama that has emerged (cf. Zillmann 1980): If enjoyment of drama is to be more than a "cerebral" reaction, that is, if it is to be an intensely pleasant, emotional affair, it has to rely heavily on residual excitation from distress that precedes any satisfying resolution. The more intense the negative affective reaction during suspense, the more residual arousal will there be to intensify the experience of relief and enjoyment as the suspense is being resolved. In other words, the price of intense enjoyment is great initial distress. This theoretical position is well supported by the research evidence (Zillmann et al. 1975; Zillmann 1980).

Enjoyment, then, often is more than the excitationally appropriate affective response to immediately present stimuli (i.e., a response whose intensity is entirely determined by the excitatory reaction to these very stimuli); it may be greatly enhanced by residual arousal from preceding stimulation. The recognition of such a dependency in the appreciation of dramatic fare has interesting consequences for television:

1. Television drama capable of moving the audience emotionally and of producing enjoyment at the affective level relies on and benefits from the involvement of stimuli that induce strong arousal reactions. It benefits from these arousal reactions, even if they derive from experiences of decidedly negative hedonic valence.
2. "Sex and violence" are proven arousal inducers (cf. Tannenbaum and Zillmann 1975). For violence, arousal reactions appear to increase with the degree of reality in its portrayal (Geen 1975, 1976), a relationship that seems to hold for children (Osborn and Endsley 1971) as well as for adults. Without "sex and violence" as arousal inducers, television drama is likely to become unexciting and flat.
3. To the extent that the frequent employment of "sex and violence" as arousal inducers fosters exciting drama, and to the extent that only such drama attracts the large audiences upon which television commercially depends, it appears likely that any curtailment of the use of violent materials will result in an increased use of sexual materials, and vice versa.

The Habituation Issue

It is common knowledge that in the seventies the depiction of both aggressive and sexual behavior became increasingly explicit and "graphic." It appears that stronger and stronger stimuli were called upon to provide the audience with excitement and, more important here, that the use of more and more powerful material became necessary to get the job done. At the heart of this impression is the suspicion that audiences have become callous, mainly because their arousal reactions have become habituated. In other words, initially strong excitatory reactions have become weak or have vanished entirely with repeated exposure to stimuli of a certain kind; and correspondingly, initially strong affective reactions have been blunted.

The possibility that excitatory reactions to aggressive and sexual fare readily habituate has significant consequences. For one thing, it makes the search for increasingly stronger arousal inducers for greater and greater excitement seem pointless. But more significantly, it projects socially undesirable side effects. If, for example, heavy exposure to violent behaviors causes callousness as far as aggression is concerned, persons might become less disturbed when witnessing real violence and, hence, be less inclined to intervene and to render help. Similarly, it can be speculated that heavy exposure to sexual materials might foster insensitivity, even boredom, regarding sex in real life.

There is, in fact, some research evidence that suggests that exposure to violent fare creates callousness in the sense of increased tolerance for violence. Drabman and Thomas (1974) and Thomas and Drabman (1975), for example, have shown convincingly that children (boys and girls, grades one through four) were more tolerant of hostile and aggressive behaviors among peers after exposure to a violent film than after seeing no film or after exposure to a nonaggressive film. However, these investigations did not involve any direct assessment of arousal reactions; and consequently, habituation of arousal cannot be considered implicated as a mediating mechanism. In a later study by Thomas et al. (1977), arousal was assessed; but this study failed to yield unequivocal results. Both children (8- to 10-year old boys and girls) and male and female adults were exposed to either violent fiction or nonaggressive sports; thereafter they watched a film clip of real violence. It was found that, with the exception of female adults, subjects who had initially seen the aggressive film were less aroused by the scenes of real violence than subjects who had initially seen the control film. But, while the findings on boys, girls, and male adults can be readily accepted as evidence that exposure to fictional violence creates a set that reduces the impact of exposure to actual violence (i.e., real violence may be trivialized by such preparatory treatment), it is difficult to see how one-time exposure to fictional violence can simulate the presumed habituation of excitatory reactions as the result of seemingly continual, repeated exposure.

An investigation by Cline et al. (1973) avoided the problems associated with one-time exposure. Boys (5- to 14-year-olds) with histories of comparatively little versus extensive exposure to violence-laden television drama were exposed to a violent movie. Heavy television viewers were found to be less responsive autonomically than light viewers, a finding which the investigators considered to support their proposal that heavy exposure to violent fare desensitizes. Thomas et al. (1977) employed a similar technique in a secondary analysis of their experimental data and found a corroborating negative relationship between the amount of television drama regularly consumed and the intensity of arousal reactions to violent contents.

These findings may well reflect a causal connection between consumption of violent fare and decreased reactivity, but they certainly do not establish such a connection. The correlational nature of the data does not permit causal inferences, and the findings are open to alternative causal explanations. For example, the findings are equally consistent with the proposal that autonomically subdued respondents seek out exposure to violent fare more than do others. This interpretational dilemma, it appears, can only be resolved by longitudinal experimental investigations.

Regarding sexual arousal, the habituation of excitatory reactions to erotica has been demonstrated in at least two longitudinal investigations. Reifler et al. (1971) (see also Howard et al. 1971) manipulated access to pornography over a period of 5 weeks and found that male adults with heavy exposure to erotica were less responsive autonomically (and sexually) to novel erotic materials than were control subjects. Similarly, Zillmann and Bryant (1980) created conditions of massive exposure to explicit erotica over a 6-week period and observed that the excitatory reaction to such stimuli had undergone strong habituation. The investigation involved a condition in which exposure to erotica was at an intermediate level, as well as a no-erotica control. Across all conditions, adult males' arousal reactions to erotica were indeed inversely proportional to the extent of prior exposure. The evidence on erotica, then, seems to support the desensitization contention. However, such an assessment is tempered by the findings of "spontaneous recovery." Howard et al. (1971) observed that 8 weeks after considerable excitatory habituation to erotica had been achieved, recovery of responsiveness to pretreatment levels was nearly complete. And perhaps more importantly, the demonstration of excitatory habituation to erotica should not be confused with a demonstration of desensitization in the sense that decreased responsiveness to erotic communications carries with it a decreased sexual responsiveness in real life. At present, there is no acceptable evidence that would suggest such a generalization (cf. Byrne and Byrne 1977; Luria and Rose 1979).

Gerbner and Gross (1976*a*, 1976*b*) have recently proposed that heavy exposure to crime-laden television drama may cause concerns about personal safety in the viewer. If such possible apprehensions about becoming a victim of violent crime are treated as affective reactions, this proposal entails the suggestion that the affect-intensifying excitatory responses to fear-inducing stimuli become stronger with repeated exposure. It has been pointed out (Zillmann 1980) that this projection is counter to a wealth of evidence generated in behavior-modification research (cf. Bandura 1969). Repeated exposure to the iconic representation of those agents and events that induce fear (e.g., their depiction on the screen)—this confrontation being entirely safe to the fearful person—has been shown to reduce fear with impressive consistency (e.g., Bandura and Menlove 1968; Hill et al. 1968; Bandura et al. 1971; Bandura and Barab 1973; Weissbrod and Bryan 1973). In fact, repeated exposure to safe representations of the initially fear-inducing stimuli is the key element in the therapeutic treatment of phobias (cf. Bandura 1971). It appears likely, then, that repeated exposure to portrayals of violent crime reduces rather than increases affective reactions such as fear. Although frequent exposure may make crime salient and seemingly ever present, it also should trivialize it and diminish its emotional impact. The positive relationship between consumption of television and apprehensions about personal safety thus does not necessarily reflect an effect of consumption, as Gerbner and Gross (1976*a*, 1976*b*) have alleged; it is conceivable that, instead, apprehensive persons are drawn to television—to crime drama, in particular—because repeated exposure is capable of alleviating their worries (cf. Zillmann 1980). Such selective exposure could, in fact, be construed as a self-administered behavior modification program.

However, despite the evidence on fear reduction as the result of repeated exposure to communication-mediated fear inducers, it remains unclear to what extent the habituation of excitatory reactions is involved. The research on behavior modification has concentrated on achieving behavioral ends. As a consequence, the treatment effects were measured in behavioral terms; arousal reactions, although usually presumed to mediate behavioral effects, generally were not assessed.

The available evidence on excitatory habituation can be summed up as follows:

1. There are indications that massive exposure to arousing stimuli can substantially diminish excitatory reactions to such stimuli.
2. There are also indications of spontaneous recovery from reduced responsiveness after the discontinuation of massive exposure.
3. The proposal that excitatory habituation to television stimuli generalizes to the respective stimuli in real life is at present without empirical support.
4. The research evidence on television's effect on excitatory habituation is scarce and rudimentary; all conclusions are consequently tentative.

In the projection of television's impact on society, excitatory habituation appears to be a highly significant mechanism. Since both ill effects (i.e., impoverishment of adaptive social affect, callousness) and beneficial consequences (i.e., superior coping with maladaptive emotions) can be anticipated on the basis of this mechanism, any projections are likely to be controversial as long as they remain associated with scarce and noncompelling data. The role of excitatory habituation in television's impact is in need of further exploration, with longitudinal experimental investigations holding the greatest promise of resolving the issue definitively.

Television and Cortical Arousal

As has been stated earlier, cortical arousal has not been directly assessed in research on television effects. Essentially, then, there are no investigations that can be discussed. However, the concept of cortical arousal has been involved as a hypothetical construct; and, because this construct is central to a recent controversy over educational television for children, we will discuss briefly the principal theoretical contentions and some investigations that bear directly on cortical arousal and vigilance.

Singer and Singer (1979) (see also Singer 1980) have taken issue with the fast pace of most educational programs for children, arguing that such rapid-fire expositions are likely to stunt the development of creative imagination. Indeed, children's television seems a continual bombardment of attention-controlling stimuli. Not only is there little time for the rehearsal of insights and for independent reflection on the information gained (circumstances which the Singers believe are detrimental to a desirable cognitive-affective development), but the control of attention seems to take the most primitive form possible: the continual exploitation of the orienting reflex (cf. Sokolov 1960; Lynn 1966; Kimmel et al. 1979) and, to a lesser degree, of the defensive response (cf. Kimmel et al. 1979). Children are confronted with constant action—which translates into extreme stimulus changes in the visual field, extreme acoustical stimulus changes, and much unexpected vivid motion. Since the television set is stationary, orienting reactions are not particularly adaptive (i.e., a spatial adjustment for superior stimulus control is not necessary). But this lack of adaptive value does not prevent the execution of the response. And, even if it is assumed that the skeletal muscular component of the orienting reflex greatly habituates under these conditions, its arousal component should remain operative. In this connection, the defensive response in perception (the reaction to stimuli such as objects rapidly moving in on the viewer) must be considered especially resistant to habituation (cf. Kimmel et al. 1979). The important consequence here is that both the orienting reflex and the defensive response are known to produce cortical arousal that serves attention. They are also capable of producing autonomic arousal. Autonomic arousal, in turn, can serve the maintenance of cortical arousal (cf. Lynn 1966; Grings and Dawson 1978).

Although, as Lesser (1979) pointed out, there is little or no acceptable evidence of lasting ill effects of fast-paced programs, e.g., in terms of unfocused hyperactivity or antisocial actions (cf. Anderson et al. 1977), there is some evidence that tends to corroborate the Singers' (1979) contention that arousing, action-packed materials are detrimental to imaginative play. Wright and Huston-Stein (1979), for example, observed that preschool children's imaginative play after exposure to an action-packed program compared to a slow-moving program was greatly inhibited. What remains unclear is whether fast-paced programs disrupt individual and social creative play only temporarily, producing a transitory, trivial effect, or whether the effect of the disruption of such play by fast-paced programs accumulates and ultimately results in the loss of a critical skill.

The allegation that rapid-fire expositions shorten the attention span of children and interfere with the retention of new information (Singer and Singer 1979) is similarly unsubstantiated. Longitudinal studies that demonstrate such effects have not been conducted. And, in contrast to the contention that information acquisition suffers from the fast pace of programs, recent investigations suggest that fast-paced programs foster superior attention and potentially superior learning. For example, Zillmann et al. (1980) observed that the fast-paced interspersion of humor in educational programs, compared to the slow-paced interspersion of the same materials, resulted in superior information acquisition (5- and 6-year-old boys and girls). These investigators speculated that this effect on information acquisition may have been mediated by the fast-paced version's greater impact on cortical arousal and vigilance. Put simply, semi-attentive children in the audience may have been made alert by the inserted humorous tidbits, and this alertness may have carried over into exposure to the immediately subsequent educational material, with the fast-paced version producing this transitory learning-facilitating alertness more often. To rule out the possibility that the observed effects were specific to humor and the result of any reward value, in a subsequent investigation (Zillmann and Bryant 1980), the humorous inserts were run against the purest form of "fireworks" on educational television: color bursts and electronic sounds, exploding stars and swishing noises. These "synthetic" attention getters proved to facilitate information acquisition just as much as equally appealing and equally involving humor. It thus appears that the "rapid fire" in educational television may actually aid the educational process, presumably because it produces cortical arousal and thereby creates attentiveness at least for short periods of time, especially in children with little motivation to pay close attention and learn from exposition.

The following tentative conclusions seem indicated:

1. The creation of transient alertness, even by "primitive means" such as the exploitation of the orienting reflex, tends to facilitate information acquisition in audiences for which a high level of attentiveness cannot be expected.
2. The long-term consequences of exposure to fast-paced, information-rich programs, especially adverse consequences for the development of cognitive-affective and creative skills, remain to be demonstrated.

Needless to say, in light of the enormity of the proposed long-term consequences for society, every effort should be made to determine whether or not such ill effects exist. Longitudinal investigations into these conceivable effects are imperative.

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Television and Affective Development and Functioning

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Research on television and youth has blossomed in the decade since the inception of the Surgeon General's study of television and social behavior. Not so for the research covered by this review. Television's relationship to affective development and functioning has not been a hotbed of theoretical and empirical activity.

Lest the paucity of work in this area be attributed to some deficit peculiar to those interested in television's role in development, it should be noted that others have also given short shrift to affective development and functioning—even without including television in the mix. In June 1980, the Social Science Research Council Committee (SSRC) on Social and Affective Development During Childhood discussed this point, noting it has come to view "emotions as perhaps the weakest link in our understanding of child development" (Read 1980). This was asserted despite the publication in 1977 and 1978 of notable books in the area by two members of the SSRC committee (i.e., Izard 1977; Lewis and Rosenblum 1978). The committee went on to say that increasing attention had been given to measurement and the physical expression of affect (especially in infancy) but that little had been given to emotions as they are represented in verbalizations, cognitions, and social behavior, to more enduring personal states such as moods, temperaments, motivations, and traits, and to the increasingly complex affective configurations found over the course of human development.

The paucity of work on affective development and functioning was also commented on in an issue of the *American Psychologist* celebrating the International Year of the Child (October 1979). Hoffman (1979), also a member of the SSRC committee, noted that "the affective side of morality . . . has long been neglected" and cited only nine references in the past decade, including two yet to be published and two general reviews of moral development. In that same issue another psychologist, Yarrow (1979), praised the "resurgence of interest in emotions" but found little recent work to report except some with infants.

With so little research altogether, it is not surprising that the amount which includes television is minuscule. What is there? Recognition of emotions, empathy, emotional responses, habituation, activity level, emotional reactions to characters, and personal states and television use. These topics will be discussed in succeeding sections of this chapter. The review will end with a brief summary of major points and implications will be drawn for policy and research.

Recognition of Emotions

The ability to understand the emotions felt by others contributes to the possibility of understanding television program content (as well as everyday social life). Such understanding of emotions may be based on proper interpretation of verbal and nonverbal cues, on proper inference from situational cues (and perhaps knowledge of the character's goals and personality), or on proper, coordinated interpretation of both sets of cues. The nonverbal means by which emotions may be conveyed and the interpretation of such nonverbal displays have received extensive study, although mostly with adults (e.g., Ekman and Friesen 1975; Ekman et al. 1972; Izard 1977). It has been asserted that there are 10 primary emotions: interest-excitement, joy, surprise, distress, anger, disgust, contempt, fear, shame, and guilt (e.g., Izard 1977). Moreover, the nonverbal displays for these emotions have been considered by some to be pancultural (e.g., Ekman et al. 1972). Others, however, have taken a more relativistic position (e.g., Birdwhistell 1970).

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Sidestepping issues of panculturalism, we will focus solely on American children's interpretations of emotions displayed by other Americans. Studies of television or television-like materials indicate that there is development over the preschool and early elementary school years in children's abilities to recognize the emotions portrayed and that young children recognize a very limited number of emotions. Younger children are likely to recognize happiness, anger, sadness, and fear (or only happy and sad), but "more complicated" emotions are not correctly recognized until later (Deutsch 1974; Feshbach and Roe 1968; Shapiro 1975). Similar findings have been reported in studies which do not use television or television-like materials (e.g., Harter et al. 1979; Honkavaara 1961; Odom and Lemond 1972). In all these studies, the situational, nonverbal, and verbal cues were apparently coordinated to convey a single message about the character's emotion.

Nowhere is there a study of children's understanding of emotions when the cues are not congruent, although such situations do arise in the television programing (and real life). Studies with adults suggest that, when incongruity is encountered, situational cues are given precedence over behavioral cues (Frijda 1969). That children may not do this (in real life or televised situations) is suggested in work by Flapan (1968) and Saarni (1979). In Saarni's study 6-, 8-, and 10-year-olds viewed photographs telling four different stories. In each, the protagonists ought probably to avoid displaying the negative emotion aroused by the situation. Only the 10-year-olds suggested such a display rule when queried and then only for an average of about one and a half of the four situations. This finding suggest that child viewers would in general accept a displayed emotion (assuming they recognized it) as the one actually felt.

Some television programs have sought to teach children to recognize their own and others' emotions, but their success has generally not been evaluated. For example, *Mister Rogers' Neighborhood* often considers children's feelings, even very complex ones. Fred Rogers describes the situations in which they arise, labels the emotions, accepts them as legitimate, and then discusses what to do with them. The impact of this on child viewers has not been directly assessed, although other impacts of the series have been examined. At the elementary level, *Inside/Out* has adopted some similar strategies. Informal evaluation of this series indicated that it provoked excellent discussions among students, but other effects were not assessed. Evaluation of the second year of *Sesame Street* indicated that television could teach preschoolers to recognize emotions better (Bogatz and Ball 1971). The effect was, however, relatively weak either because the series devoted relatively little time to the topic (Bogatz and Ball 1971) or because the recognition of emotions is difficult to teach.

Proper recognition of emotions is often important to proper understanding of program content. It would be useful for producers, parents, and others to understand that preschoolers are unlikely to recognize any emotions other than happiness, sadness, anger, and fear and that even 10-year-olds only sometimes understand that a character may choose to display an emotion different from that felt. Producers and child caretakers also have the opportunity to use television to teach children to recognize emotions and to understand display rules. The medium is visually and auditorally rich, as close to real life as we can get without being there. It may be significantly enhancing the child's experiences with affect. If not, it certainly could do so.

Empathy

Empathy has been demonstrated to be an important influence on emotional responses to the empathy object's experiences and feelings (sometimes it is even identified by such responsivity) and on subsequent altruistic and helping behavior (Hoffman 1977; Krebs 1975). A logical analysis of the elements necessary in order to experience empathy—and some research evidence—suggest that a child needs to be able to recognize the object's emotion, to recognize the other and self as separate (although usually having some similarity increases the probability of empathic responses), and to feel an emotion similar to that of the empathy object.

Empathy, defined as feeling the same emotion a character feels, has been virtually unstudied. Given that young children correctly recognize few emotions likely to be portrayed on television, they have little opportunity to experience empathy. But even when such opportunities exist, empathy for television characters has not been studied. The closest work we have is an older study by Feshbach and Roe (1968) in which children in the early grades of elementary school felt some empathy for characters depicted in slides, more for the "simpler" emotions, and more for a same-sex character. There seems to be no work on the empathic reactions of older children and adolescents to the experiences of television characters.

A provocative study by Chandler (1973) suggested that some elements of the empathy process (recognizing another's emotion and feeling a similar one) may be cultivated through the use of drama and videotape. In this study, adolescent boys with arrest records participated in "little theater" groups in which they successively played each role in a drama and viewed a videotape of each performance. The re-arrest record for these boys was less than that of a control group. This was attributed to an (unmeasured) increase in role-taking skills, i.e., recognizing and properly identifying another's feelings, wishes, etc. The obvious differences between this study and youths' normal patterns of television use make it impossible to suggest that normal viewing might lead to similar results. At the same time, it is a provocative piece of work which leads to speculations about what might be done with television and some elements of the empathy process.

Television presents numerous empathic opportunities and could present more. Given the important influence empathy may have on social behavior (and, because it can produce arousal, perhaps on learning), it is an important area for future study.

Arousal of Emotions

As any good television producer will admit, successful programing ordinarily depends on the arousal of emotions (and for "negative" emotions their later resolution). Among the purported 10 primary emotions, interest-excitement, joy, surprise, distress, and fear are those most often traded upon in American programing. A number of studies indicate that television programing succeeds in arousing emotions in children. In a 1933 study of American entertainment films, children were found to be emotionally responsive (as measured physiologically) to film content (Dysinger and Ruckmick 1933). Responsivity varied by content and age, with younger children more responsive to action and danger themes and less responsive to love and romance themes. Older children were more responsive to love and romance themes. A modern study by Cline et al. (1973) indicated that children's physiological responses varied according to the aggressive content and danger portrayed.

Moving from physiological to self-report measures of emotional responses, we find a number of studies of children's perceptions of their emotional responses to television content. These studies were done by researchers associated with production and broadcast groups such as the Children's Television Workshop and Sveriges Radio. They were usually motivated by concern that the program content would evoke "negative" emotional responses in child viewers. In one, preschoolers were found to be frightened by monsters who appeared to familiar muppet characters at night. The segment was never broadcast (Lesser personal communication). In another, Swedish 5- and 6-year-olds were found to have been frightened at least once or twice by *High Chaparrel*, but the frequency of fear reactions was not related to the frequency of viewing the series (Linné 1971). In a third study, first through third graders in Sweden were found to have some negative reactions (disgust, fear, and the like) to certain portions of the program *Why Must We Die?* Overall, however, their reactions were rather positive, particularly because the title had led them to expect a more horrific program than they saw (Filipson et al. 1974).

While viewing a program may provoke emotional responses right at that time, it is also possible that frequent viewing of any particular type of content may lead to a more generalized evocation of relevant emotions. This possibility has been assessed for affective displays arising as a consequence of viewing *Mister Rogers' Neighborhood* or *Sesame Street* and for feelings of fear arising as a consequence of viewing aggressive programing.

A recent study compared the effects of *Mister Rogers' Neighborhood*, *Sesame Street*, and neutral films on preschoolers' displays of positive (as opposed to negative) affect in the nursery school setting (Tower et al. 1979). No significant group differences were found, nor were they found in interaction with age, IQ, sex, or baseline level of imagination of the children. It was found that those initially high in imagination decreased their displays of positive affect, while those initially low increased them from pre- to post-viewing (significant difference in change scores). Although there was no significant interaction between programs and baseline imagination, the authors performed tests of changes within each series. It was found that positive affect displays increased significantly for low imagination children viewing *Mister Rogers' Neighborhood* or *Sesame Street* but not for low imagination children viewing neutral films.

Two earlier studies examined similar issues, although displays of positive affect were not singled out for analysis. In one (Coates et al. 1976), preschoolers who viewed *Mister Rogers' Neighborhood* significantly increased their giving of positive reinforcement, while those who viewed *Sesame Street* did not change significantly. Positive reinforcement was defined as "giving positive attention such as praise and approval, sympathy, reassurance, and smiling and laughing; giving affectionate physical contact such as hugging, kissing, and holding hands; giving tangible reinforcement such as tokens, prizes, and other objects." What contribution the displays of positive affect made to a child's composite score cannot be ascertained.

The failure of *Sesame Street* to stimulate significant increases in positive reinforcement is difficult to evaluate in light of the authors' selection of program segments. *Sesame Street* segments were selected so as to be "higher in punishment than in positive reinforcement" (total instances viewed of positive reinforcement equaled 56 and total punishment equaled 91). In contrast, *Mister Rogers' Neighborhood* segments were selected so as to reflect "the emphasis of that program on social and emotional development such as cooperation, verbalizing one's feelings, and coping with frustration" (total instances of positive reinforcement equaled 200 and total punishment equaled 0). In light of these series' differences it is notable that there were no effects for either series in the incidence of punishment behaviors by the children.

An even earlier study—one which appeared in the original Surgeon General's report—found some differential effects of *Mister Rogers' Neighborhood*, *Batman* and *Superman*, and neutral films on preschoolers' verbalization of feelings (Stein and Friedrich 1972). This category included verbal statements of positive and negative affect and of the reasons for one's own behavior. As with the Coates et al. study (1976), the contribution of the affective statements to a child's final score cannot be ascertained. For the more general behavior, it was found that preschoolers of lower socioeconomic status increased their verbalization of feelings with exposure to *Mister Rogers'* and decreased them with exposure to *Batman* and *Superman*. The opposite effects were obtained for higher socioeconomic preschoolers. Although not statistically strong, these results are sufficiently consistent with others in the study to suggest that they are actual program effects.

Switching from studies of positive affect among preschoolers to studies of the negative affect of fear among elementary and secondary school students, one runs into Gerbner and his colleagues (Gerbner and Gross 1980) who believe they have demonstrated that children, adolescents, and adults who are heavier viewers of television are more likely to see the world as a dangerous place than are lighter viewers (assuming such beliefs are associated with feelings of fear). Important elaborations and revisions of this cultivation hypothesis (Doob and Macdonald 1979; Gerbner et al. 1980; Hawkins and Pingree 1980) and significant threats to its validity (Hirsch 1980, 1981; Wober 1978) have recently been appearing in the literature. Moreover, the hypothesis now extends well beyond a "simple" effect on adjudged dangers in one's environment. These are important, but it is sufficient here to note that "fear" is the one (traditional) affective outcome of television viewing which has received much attention this past decade.

When the phenomenon of observational learning was first being investigated, there were a few studies which demonstrated that affective responses could be vicariously conditioned to particular stimuli (Bandura and Rosenthal 1966; Berger 1962). It is evident that television programing has the potential for providing such conditioning. The rural child may develop negative emotional responses to the big city in which all crime drama takes place. The isolated white preschooler may develop positive emotional responses to blacks if they are only viewed on *Sesame Street* and *Mister Rogers' Neighborhood*. That such conditioning is possible is generally accepted by those who study television and youth, yet little direct testing has been done for it.

Although there is not much of it, the evidence we have reviewed is fairly clear about television's ability to arouse emotions in children. It can do so. It can affect the feelings of the youngest, least sophisticated preschooler and of the more sophisticated, even jaded, adolescent. It can provoke feelings which may be measured during viewing, right after viewing, and in more generalized, long-term situations. Undoubtedly, such effects vary according to the developmental issues which are most salient for the viewer and the ability of the viewer to understand program content. What these variations are and whether they are important, indeed whether the short-term arousal of any emotion is important, are yet to be determined. Surely the longer, more generalized emotional arousal effects and the possible vicarious classical conditioning effects are important. But we have much to do before we understand how these effects occur and whether they are of sufficient magnitude to be interesting.

Habituation

In the preceding section we examined television's success in provoking emotional arousal. Here we examine the obverse: its contribution to the diminution or disappearance of emotional arousal when one is exposed to selected stimuli. In all cases, the stimuli are ones which are demonstrated or presumed to provoke fear, distress, anxiety, alarm, and the like. They are dogs, snakes, violence, dentists, hospital procedures, and so on. In all cases, what is demonstrated is that repeated exposure to the stimulus, particularly under conditions which diminish its threatening qualities, leads to decreases in the emotional arousal it provokes.

The great majority of studies in this area have been clinical. As such, they remain a far cry from ordinary television programs and viewing circumstances. They involve—singly or in combination—live models, graduated series of vicarious interactions with the stimulus, interspersed practice, concomitant training in relaxation, specially made amateur film and video productions, unusual viewing situations, and highly specifically motivated audiences. A recent review of much of this work may be found in Rushton (1979). It will not be included here because the particular conditions of the studies are too far removed from the usual television experience. Nonetheless, the findings from these studies are congruent with those which explore the more common television experience.

Most of the speculation about habituation effects of television viewing has focused on habituations resulting from exposure to televised violence. It is postulated that repeated exposure to televised violence may decrease "normal" sensitivity to aggression and violence—sometimes known as the "Kitty Genovese effect." Two studies have found that youths who were high viewers of televised violence or were experimentally exposed to high televised violence were less responsive in subsequent exposures to televised violence than were natural or experimentally produced low viewers (Cline et al. 1973; Thomas et al. 1977). The Swedish study of *High Chaparrel* reported that high viewers were more likely not to be frightened by the series, although the differences by viewing were not significant (Filipson et al. 1974). There is even some indication that differences in exposure (and therefore presumably reactivity) may carry over into behavioral responsiveness to aggression (Drabman and Thomas 1974). These few studies have tested interesting and important ideas, but they have only begun to provide findings which may be generalized or used.

Activity Level

Activity level is not precisely an affective variable, but it might reasonably fall within the "personal states such as moods, temperaments . . . and traits" which the SSRC Committee on Affective and Social Development included in its purview. For this reason, and because it has been an area of significant debate among those concerned about programing for preschoolers, it is included in this review, although there is little research on it.

The debate was provoked by *Sesame Street.* Critics saw its fast pace, frequent content changes, and general "hype" as contributing to hyperactivity and restlessness in preschool viewers. Sometimes this criticism was paired with an endorsement of the contrasting style of *Mister Rogers' Neighborhood.* Little research is available to illuminate the debate. Of the three studies which clearly pertain, one found none of the feared effects for *Sesame Street* (Anderson et al. 1977); another found no differences in concentration among viewers of *Sesame Street, Mister Rogers' Neighborhood,* and neutral films (Tower et al. 1979); and a third did not test *Sesame Street* but found increased ability to tolerate delay among preschool viewers of *Mister Rogers' Neighborhood* as compared to viewers of *Batman* and *Superman* or of neutral films (Stein and Friedrich 1972). If these three studies are enough for drawing conclusions (which is doubtful), there seem little grounds to the criticisms of *Sesame Street* and some grounds for the praises of *Mister Rogers' Neighborhood.*

Emotional Responses to Characters

Two previous sections of this review considered empathy and children's emotional responses to television programing. Both empathy and emotional responses may be provoked by and directed toward specific characters in a program. Why, then, is a separate section being devoted to emotional responses to characters? It is certainly not because there is an abundance of research on the topic; rather it is because there are a few such studies, because emotional responses to programing are not necessarily provoked specifically by characters, and because emotional responses to characters may not be empathy.

Two interesting studies of people's emotional responses to characters have been conducted by the German researcher Sturm (1975, 1978). One with college students and a second with 14- and 15-year-olds demonstrated that viewers developed strong affective reactions to main characters and that these reactions were likely to persist over a 3-week period. This persistence was in marked contrast to the degradation in cognitive effects over the same period. Emotional reactions to the program as a whole were tested with the college students only. These, too, were marked and persistent. Moreover, the specific emotional responses differed, depending on whether the program was presented via radio or television. Such emotional responsivity and its persistence, should these be replicated in other work, would have implications for our catalog of television effects. They ought also to be influential in production decisions about changing characters' personalities or even eliminating them from a series.

A different area which one might consider here is that of identification with characters. Although the ways of conceptualizing identification are many (cf., Bandura 1969; Kohlberg 1969; Mischel 1970; v. Feilitzen 1974), a good proportion of them involve some affective response to the person with whom one is said to identify. This response might include liking, sympathy, involvement, or empathy. A small proportion of conceptualizations focus on whether identification arises from perceived similarity with the identification object or from the wish to become like him or her.

There is a relative wealth of work which indicates that children do indeed have preferences among characters and that greater liking is felt for characters who are more similar to viewers (cf., Dorr in press; v. Feilitzen 1974). Similarity may be defined on the basis of age, sex, ethnicity, or interests. For each of these dimensions, children are likely to report liking the character who is similar to them more than they like the dissimilar character. Naturally, liking is tempered by how likable the character is, the character's importance to the story, and his or her

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achievements in it. Children are not blind in their preference for characters similar to themselves, but, when given a reasonable choice, they will like better the one who is more similar.

Sympathy, involvement, and empathy have less often been measured as responses to television characters. An older study of college students indicated that those who reported greater emotional reactions at the crisis point of a film also reported being more identified with the protagonist (Tannenbaum and Gaer 1965). Also, the older work of Maccoby and her associates indicated that college students looked relatively longer at (were more involved with?) same-sex characters (Maccoby et al. 1958) and that seventh graders remembered more actions by same-sex characters or characters who held social class positions to which they aspired (Maccoby and Wilson 1957). Finally, in the study reported earlier (Feshbach and Roe 1968), children were more likely to report empathic reactions (emotion matching) for same-sex characters.

Most of the work reviewed in this section is old, having been completed well before the Surgeon General's study of television and social behavior. Yet the topic is an important one. Continuing series are most of what American youths view. Even the Saturday morning cartoons are that. Youth, therefore, have an extended period of time to get to know characters well and to relate to them emotionally. Such relationships may be important in facilitating learning from (or simply being influenced by) program content. The mechanisms for such facilitation could be either increased arousal while viewing or increased desires to be like the character. Either way, knowledge of such mechanisms would help us to produce responsibly and effectively for children, to guide their viewing appropriately, and to understand better how television operates to produce effects.

Work conducted for the Surgeon General's study was heavily influenced by observational learning theory. It generally eschewed concepts of liking, identification, selection, and the like as moderators of exposure effects. If television often enough presented to youth something to be learned and/or imitated, then they were likely to learn or imitate it. Only occasionally did it explore how viewers made choices among all the content to which they were exposed. Such an interest in selectivity and limited effects is becoming more prominent in the study of television and youth (as well as the study of observational learning). Emotional reactions to characters is one area which might further our thinking along these lines.

Personal States and Television Use

Most American television researchers, particularly those whose primary affiliations have been disciplines other than communications, have been most interested in the content the medium presents, viewers' understandings of it, and its effects on them. The work reviewed thus far clearly fits these orientations. An entirely different perspective is provided by a functional approach most often termed "uses and gratifications" (Blumler and Katz 1974; Katz 1980). This approach assumes that people have needs which are sufficiently conscious that they can choose media or even content within a medium so as to provide gratification for these needs. Some of these needs must be accompanied by or even identified by an affective state.

The uses and gratifications approach has been subjected to numerous criticisms (Blumler 1978; Blumler and Katz 1974; Salomon and Cohen 1978; Swanson 1977; Weiss 1976). Among theoretical criticisms of this approach is its reliance on a functionalist perspective, a search for the consequences of choices about media consumption, an assumption that media consumption serves to maintain normalized social roles, and a reliance on the belief that "everything we do is useful." Additionally, it is pointed out that the approach ignores the popular culture aspects of media use and the possibility that media content may help sustain the position of the advantaged of society. Methodologically, serious threats to acceptance of the work are posed by the reliance on correlational rather than experimental design ("charting and profiling," as Katz et al. (1974) called it), the lack of specificity about the nature of needs and gratifications and the links between them, and the paucity of validation studies. Despite these problems, the approach is still a notable development of the 1970s which has implications for theory and practice in the 1980s.

Audience Uses of Different Media

Most of the work in the uses and gratifications mold has sought to chart the reasons audiences turn to different media or different content within a medium. Individuals are given a list, developed a priori or through pilot testing, of needs which media or content might fulfill. They are then asked to indicate the extent to which each medium or content fulfills each need through rating, ranking, or simply nominating. Scores are calculated, factor analyses are sometimes run to determine the main types of needs media or content may fulfill, and media or content are described in terms of the functions they most fulfill. Obviously, the approach has been heavily descriptive. More powerful tests of validity are clearly in order.

A number of such studies have been conducted with children and adolescents (Brown et al. 1974; Greenberg 1974; Johnstone 1974; Kline et al. 1974; Rubin 1977, 1979). Altogether they provide rough evidence that certain kinds of gratifications are likely to be sought from media or content (including arousal, companionship, social integration, escape, relaxation, and so on) and that media or content may be somewhat differentiated in terms of the gratifications they are most often perceived to provide. Television is perceived to be a medium which is used for learning, relaxation, escape, social interaction, arousal, passing time, and habit.

Additional work should be conducted with children and adolescents to determine the extent to which there is a set of needs that general television viewing satisfies and to understand the ways in which program choices may be motivated by felt needs and anticipated gratifications. Should such phenomena be demonstrated in reasonably compelling studies (rather than what we have so far), the pattern of uses and gratifications for viewing television and for viewing programs might be used in some practical ways. It would identify why youth turn to television viewing as an activity of choice or to the viewing of particular program types and allow one to substitute other activities or program types which provide similar gratifications but are more desirable for youth. It would open up the possibility of increasing appeal by increasing those program attributes which one infers produce its major gratifications or of broadening appeal by adding program attributes which would provide additional gratifications.

Social Interaction and Television Use

Work on the relationship between a child's social integration and his/her amount of television viewing may be interpreted as providing some support for the uses and gratifications perspective, although the bulk of this work was conducted before the perspective became popular (its third birth according to Blumler and Katz). At least three separate studies of children (Bailyn 1959; Murray 1972; Schramm et al. 1961) found that those with poorer or more unsatisfactory social relationships watched more television, and a more recent review of work with adolescents (Chaffee and Tims 1976) concluded that the evidence generally supported a similar pattern for them. While some contradictory findings have been reported for both children and adolescents, the evidence seems to be more supportive than not for the existence of such a relationship. It may be argued that this result demonstrates the use of television to fulfill a need for social interaction or perhaps assuage the emotional experience of loneliness (e.g., Johnstone 1974).

It may, of course, be contrarily argued that youth become social isolates or socially unskilled because they watch television rather than interacting with peers. Indeed, time use studies with children and adolescents (Baxter 1960; Lyle and Hoffman 1972; Maccoby 1951; Schramm et al. 1961) and with adults (Robinson 1972) suggest that television viewing is apt to co-occur with decrements in informal play activities, usually with peers, in conversing, and in social visiting outside the home. The decrements in these social interchanges are small, being about 5 minutes less conversation and 12 minutes less social visiting per day for adults (Robinson 1972) and not much different in magnitude for youth. Nonetheless, it is clear that children, adolescents, and adults who have television or who watch it more sacrifice some informal time with their peers which might, if it cumulated over long periods of time or occurred prior to the development of good social skills, lead to decreased ability to function well in social interchanges. That this is possible does not mean that this is the explanation for what is strictly a correlational relationship between amount of viewing and social isolation. A uses and gratifications explanation—that lonelier youth use television to satisfy (partially) a need for social interaction—is every bit as possible and every bit as unproven.

The reported relationships between high amounts of viewing and troubled peer relationships—whatever the causal explanation—ought to concern parents and those professionals who deal with children and adolescents. Devoting unusually many hours to watching television almost necessarily leads to spending less time with peers, and for some children at least it is associated with unsatisfactory peer relationships. It is clearly a signal that the youth's social skills and integration into a peer group ought to be examined. Should they be found wanting, one might take a uses and gratifications perspective and be grateful that television is available to provide some of the (para)social interaction which the youth otherwise lacks. One ought also, however, to explore ways to help the youth achieve more gratification through direct social interaction.

Television Uses and Viewing Effects

A third strain of research within the uses and gratifications perspective has either assumed or tested the assumption that the reasons for one's use of television predict something about its effects. In the first case, differences in uses on the basis of ethnicity, age, or the like are explored with the implicit assumption that such differences might predict differences in impact. Most often such work has examined ethnic differences among teenagers (e.g., Greenberg and Atkin 1978). Findings, such as black youth reporting more use of television to learn about the social order and to reinforce their social behavior, serve as the basis for extrapolations to concerns about the nature of the television social order black youth will believe in. While such extrapolations have logical

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appeal, actual testing of the assumed relationship is needed.

There are few examples of testing the presumed relationship between uses and effects. Those available have studied adults, employing a correlational design. Neuman (1976) found a significant but small relationship between motivation for watching television news and recall of its content. McLeod and Becker (1974) looked at the political effects correlates of five motivations for using television and found some relationships which they interpret as providing evidence of validity for a transactional model in which audience orientations to media use and media content combine to produce effects.

We now have more than 20 years of work on television effects which repeat the refrain "some of the people some of the time." It is time to begin to ferret out "which people when." There is no guarantee that the uses and gratifications approach would provide part of the answer, but the logical appeal of the proposed relationship and the bits of supporting evidence with adults provide some motivation for investigation along these lines.

Summary and Implications

The Surgeon General's study of television and social behavior provided a wealth of new work about television and youth and served as the impetus for much of the work which has appeared in the decade since then. We now have research which serves as a good basis for advising parents, educators, and producers and as a stimulus to further work, but we still have little which provides a firm base from which to suggest policy. These statements apply to the entire field of television research and to the area of television and affective development and functioning. This area is certainly not one of those which has blossomed or borne fruit this past decade, but it has provided some work from which implications for practice and research may be drawn.

The work on the recognition of emotions and on empathy has clear implications for those parents, educators, and producers who are concerned with youths' understanding of programing and content effects on them. Children younger than about 7 are unlikely to recognize more than the "simplest" emotions or to feel much empathy. Thus, content which would require such abilities or actions ought either to be avoided or to be handled with special attention to successful communication. Moreover, those who guide children's viewing and/or understanding may choose to select programs with these limitations in mind and/or to be especially careful to assist children in understanding the content.

One may argue that actions which promote youths' understanding of television programing are desirable, even if understanding has not been demonstrated to be related to impact. An accurate understanding of what we experience is a desirable goal for all of us. At the least, one is off to the right start should one choose to react to or use what has been experienced. But research into the relationship between understanding and impact is sorely needed in the 1980s. Such work has been done sporadically for sometime, but it is difficult and has not yet been very rewarding.

Also, the possibility of habituation to particular content needs to be explored further so that we might understand the circumstances under and extent to which it occurs. People's involvement with television characters, particularly those in continuing series, needs to be explored further so that we might understand how and when it occurs and what contribution it makes to effects of exposure. Finally, the uses and gratifications perspective could profit from further development, particularly as it might lead to an understanding of the relationship between uses and effects and to an ability to provide alternative activities or programing which still satisfy needs.

This review has ended with numerous suggestions for research and few for practice and policy. Television's role in affective development and functioning is one of the areas which has not received much attention in the past decade. Perhaps its time will come with this decade.

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Television and Educational Achievement and Aspiration

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Media—mass or otherwise—are traditionally the destroyers/saviors of education, learning, and truth. Historically, each new development in communications technology has generated rejoicing and dismay, as the means for imparting information, skills, instructions, and values have become amplified and extended. Of course, literacy itself has always had "divisive and unifying potentials" (Wick 1980, p. 108). Eisenstein (1980) recounts how the emergence of printing divided Western Christendom even before the appearance of Luther's 95 Theses.

At some points, both media and "education" were seen as related ills. In 1671, Governor William Berkeley of Virginia proclaimed:

> I thank God that there are no free schools and no printing presses in the Province; and I hope there will be none for a hundred years. Learning has brought disobedience and heresy, and sects into the world, and printing has divulged them, and libels against the best government. God keep us from both (Stinnett 1968, p. 6).

Two hundred years later, the ideals of universal education were firmly entrenched in American culture; like all noble aims, the threats to the ideal were pervasive and insidious. At a conference in Boston in 1879, Miss M. A. Bean delivered a paper entitled, "The Evil of Unlimited Freedom in the Use of Juvenile Fiction," in which she asked,

> What other result can be expected when three-fourths of our pupils average a library book per day, which they claim to read through? What wonder that we have yet to learn of the boy or girl who can devour half a dozen books per week and yet retain rank number one on the school record. . . . It is easy to see that this mental process, repeated day after day, is not going to produce a generation of thinkers or workers but rather of thoughtless dreamers.

Since then, exposure to fiction via whatever medium has increasingly become viewed as a deleterious factor in intellectual development, particularly for reading skills. In the 1930s (and beyond) movies were the target; in the 1950s, Wertham's influential writings (1954) charged comic books with almost singlehandedly causing permanent reading impairment.

More recently, the villain/redeemer has become television. At one extreme, we hear that television has created a brighter, more aware generation, with greater knowledge of the people and the cultures of the world (cf. Stein 1979). Another version, in a middle stance, holds that television *could* be used to stimulate reading, expand perspectives, and develop critical faculties (Eco 1979; Herz 1979). The other extreme, however, is often more vocal, blaming television for problems ranging from a stifling of creativity to declining scholastic aptitude scores to illiteracy. According to a Gallup poll of October 1976, 49 percent of the public holds "excessive TV viewing" accountable for a decline in the quality of education. The reasons behind this view vary; some suggest that the act of viewing itself and the simplicity of content produce intellectual passivity (Graves 1978; Morris 1971), and some attribute improper brain development to excessive viewing (Winn 1977). Still others have stressed larger social processes, claiming that educational institutions "are weakened by the tendency of media to present the whole process of education in a belittling or unfavorable light" (Seldes 1957, p. 95).

In this review[1] we shall look at the evidence concerning television's implications for schooling and education. Many past studies have been extensively reviewed by Hornik (1979, 1978), and we shall borrow from his discussions. We also will summarize and elaborate upon some of our findings in the areas of television, IQ, achievement, and reading (Morgan and Gross 1980; Morgan 1980) and discuss new results concerning the longitudinal relationship of television viewing to educational aspirations among adolescents.[2]

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Among adults, educational attainment is an enormously powerful predictor of television exposure, in terms of both quantity and quality (see e.g., Comstock et al. 1978); heavier viewers generally have spent fewer years in school. According to our analyses of NORC General Social Surveys for 1975, 1977, and 1978, most demographic groups show the same pattern: the proportion of heavy viewers (over 4 hours a day) among those who did not attend college is generally twice the proportion of heavy viewers among the college educated.

Of course, the better part of this pattern probably results from preexisting differences, along economic, intellectual, psychological, and social dimensions. To the extent, however, that this recurrent finding represents an actual social phenomenon, it has generally been considered to be one of educational level causing amount of daily television exposure.

But could it go the other way around as well? Is it possible that how much television one watches in youth contributes in some way to subsequent educational attainment, perhaps through complex interactions and reinforcement effects of ability, achievement, and aspirations? To begin to answer that question, we must look at television's relationships to each of these factors.

Television and IQ

A number of early studies reported negative relationships between amount of viewing and measures of IQ, ability, or aptitude. Schramm et al. (1961) found that students with "high mental ability" (IQ over 115) watched more television than those with low ability (IQ under 100) until ages 10–13; at this point, the low IQ students become heavy viewers, and the high IQ students begin watching less and less. Consistent negative associations between viewing and IQ were also found by Scott (1956), Bailyn (1959), Himmelweit et al. (1958), La Blonde (1966), and Thompson (1964). There is some variation in results from younger children (Lyle and Hoffman 1972) and some variation by culture (see e.g., Smith 1971), but the negative association between television exposure levels and various measure of students' "aptitude" is as firmly replicated as the relationship between adults' educational attainment and viewing.

Our analyses (Morgan and Gross 1980), based on a sample of 625 sixth through tenth graders, reveal a simple correlation of $-.27$ ($p<.001$) between reported hours of daily viewing and IQ test scores. Examination of the relationship's form reveals a monotonic association. Unlike previous studies, however, we investigated the possibility that this correlation is spurious because of social class (which is strongly related to both variables—negatively with television, positively with IQ). Partialing for socioeconomic status (SES) though, only reduces the correlation to $-.24$; and it remains at about that level when other controls (sex, grade, family size) are added. Further, the correlation between viewing and SES ($-.18$, $p<.001$) drops only slightly (to $-.14$) when controlling for IQ scores. So, while amount of viewing is related to both IQ and SES, its association with one is largely independent of the other.

There is more to the correspondence between students' viewing patterns and their IQ scores than a simple negative correlation. For one thing, the association is significantly stronger for boys than for girls. For another, heavy viewing seems to "preclude" having a high IQ more than light viewing "allows" it. That is, light viewers manifest a wide range of IQ scores, while heavy viewers' low IQ scores show significantly less variance. This suggests that heavy viewing may help sustain lower levels of ability. Finally, television's power to predict IQ is either as strong or stronger than that of a broad variety of social, personal, demographic, and family factors. In sum, it is extremely unlikely that the association between viewing and IQ scores is spurious. While IQ is most likely to be temporally prior, there are indications that it interacts with viewing and that both may be mutually reinforcing.

Television and Achievement

The issues involved in research on television and school achievement are more complex theoretically, conceptually, and methodologically than those pertaining to television and IQ. The literature is also more conflicting in terms of methods, findings, and interpretations.

An early strategy called for the comparison of children from homes or communities without television to those where television was available. Sometimes the comparison involved the same subjects, before and after the availability or ownership of television, and sometimes a control group was thrown in as well. These various quasi-experimental studies also employed a range of achievement variables of problematic comparability.

Greenstein (1954), using a very small sample of 67 sixth graders, found a nonsignificant tendency for those whose families became set owners to receive higher school grades in every subject except penmanship. At about the same time, however, Dunham (1952) found no difference in the school grades of "television" and "non-television" pupils of the same age. But, he notes, "poor television habits, lower IQs, lower parental control, and poorer school achievement tend to be found in the same child." Schramm et al. (1961) found that younger students "with television" have a vocabulary advantage over those "without television," until about the sixth grade. Finally, Himmelweit et al. (1958) matched viewing and nonviewing 10- to 14-year-olds, finding slightly but not significantly better marks among nonviewers.

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[2] The data base for these analyses is derived from a 3-year study of adolescents attending a public school in suburban/rural New Jersey. Cross-sectional data are from the second year of the study (N = 625). Longitudinal analyses are based on the 216 students who participated all 3 years.

Pre- and postownership or reception studies have continued during the past 20 years in a number of different countries. In Japan, the availability of television accompanied a decline in both time spent on homework and reading skills, particularly for fifth- to seventh-grade boys (Furu 1962). In Finland, Lahtinen and Taipale (1971) found that 223 second, fourth, and sixth graders in areas with television showed little difference in general vocabulary from 90 similar children in non-television areas. Although the authors do not interpret their findings as such, there appears to be a slight curvilinear relationship with amount of viewing within the television areas; we will return to this notion. In Venezuela, Garcia et al. (1974) reported a positive association between television ownership and both language arts and mathematics among 10,000 high school students.

Hornik (1978) analyzed 3 years of data for three cohorts of El Salvadoran seventh to ninth graders (with about 600 in each cohort), finding "a striking negative association" between the recent acquisition of a television and long-term reading skills growth. Specifically, students whose families acquired television during the course of the study advanced in reading ability at significantly lower rates than those who either never got sets or had them all along. New access to television foreshadowed a slowing in growth of reading ability in all three cohorts but a similar negative effect on general ability emerged in only one.

Finally, Williams et al. (1977) reported preliminary results from a fortuitous natural experiment involving three Canadian towns: Notel which did not have television reception but was to get it soon; Unitel, which had one channel; and Multitel, which had several. All three towns were studied before and after television came to Notel. This investigation benefited from the fact that most Notel residents already owned sets, anticipating imminent reception. In the first phase of data collection, Notel second and third graders had better reading scores than Unitel children, who in turn scored higher than Multitel children. More importantly, 2 years later (i.e., after Notel received television), the advantage of Notel children in reading ability had disappeared. No differences were found for eighth graders. Among fourth and seventh graders, similar results were obtained for verbal ideational fluency, but there were no effects on vocabulary or figural ideational fluency.

Hornik (1978, 1979) pointed out a number of design and execution flaws in many of these "access" studies, ranging from problematic matching procedures to lack of appropriate controls. In addition, they contain an even more critical theoretical drawback: It is difficult to see how the results of such studies can elucidate the consequences of television in societies where it has been ubiquitous for the entire lifetime of half the population. Before-and-after community studies surely provide useful data about responses to technological novelty; but television is certainly no novelty to our children.

Of course, correlational studies of amount of television exposure and achievement variables do not provide equally firm foundations for causal inferences even though they tend to begin with universal saturation as a given. What is more, many of these studies report conflicting results; they range from no association to weak association, to inconsistent association among younger children (Quisenberry and Klasek 1976; Zuckerman et al. 1980; Perney et al. 1978; Long and Henderson 1973; Lu and Tweeten 1973; Ridder 1963).

Two notable exceptions are Burton et al. (1979) and Medrich (1979), both of whom found relatively strong negative associations among younger children. Medrich compared sixth graders from "constant television" households (i.e., those in which the set is usually on in the afternoon, during dinner, and most of the evening) to those from "nonconstant television" households, in a largely (59.8 percent) black California sample ($N=764$). Two-thirds of those in the constant television homes read below the fifth grade level; two-thirds of those in nonconstant television homes read above that level. Finally, Burton et al. (1979) reported a substantial negative correlation ($-.56$) between preschool amount of viewing (measured by mothers' retrospective report) and academic achievement in the first grade, among 128 children in New Orleans. Unfortunately, they did not report results for separate areas of achievement; the scores are an average of reading, arithmetic, and language tests.

On the other hand, studies of children beyond the fourth grade are far more uniform, with almost all finding at least a small negative relationship between amount of viewing and achievement levels, and with reading ability in particular (Starkey and Swinfrom 1974; Nelson 1963; Gadberry 1977; Childers and Ross 1973; Furu 1971; Witty 1967; National Assessment of

Educational Progress 1978; Slater 1965; and several of the television-IQ studies listed above).

There are at least three possible reasons for the correlations to be so small. First, they might accurately reflect a relatively small effect. Second, they might be masking a nonlinear association. Third, small overall correlations may be obscuring larger effects in highly susceptible subgroups. Clearly, these are not mutually exclusive explanations; in fact, there are strong indications that all three may be going on. Various studies provide substantial evidence for a "gentle" curvilinear relationship and wide subgroup differences.

A massive DHEW study conducted in 1964 of 650,000 students in 4,000 schools (Mayeske et al. 1969) found such a curvilinear pattern between amount of viewing and achievement scores. (Unfortunately, they only report results for a composite achievement measure.) More recently, four statewide assessment programs have produced data that support the same conclusion in terms of reading skills. In Rhode Island (Rubenstein and Perkins 1976), Texas (Texas Assessment Project 1978), Pennsylvania (Kohr 1979), and Connecticut (Connecticut State Department of Education 1980), large-scale, statewide testing projects have come up with remarkably similar results. For younger students (up to about eighth grade), those who watch an hour or two a day score higher in reading achievement than those who watch less; reading scores steadily decline at the next higher viewing levels, and drop substantially among the heaviest viewers.

The upward trend in the scores of "medium-light" (over extremely light) viewers is quite strong for fourth and fifth graders in Connecticut, Rhode Island, and Pennsylvania, moderate for sixth graders in Texas, and weak for eighth graders in all three Eastern States. In all cases where data for older students (eleventh and twelfth graders) are reported, however, the relationship is negative *and* monotonic.

Curvilinear patterns were also found by Haertel and Wiley (1978) in a nationally representative sample of about 3,000 first through sixth graders. Viewing data came from in-home, parental interviews. Two different tests (one at the appropriate grade level, one below it) were administered in each of four different achievement areas (vocabulary, reading comprehension, mathematical concepts, and mathematical computation). Thus, children in each of six grades completed eight tests, providing 48 comparisons (24 for vocabulary and reading, and 24 for mathematics). In 20 of the vocabulary and reading comparisons, children who watch from 1 to 2 hours a day score higher than the (few) children who watch less than an hour, and scores decline monotonically at each higher viewing level. This pattern holds for 13 of the mathematics comparisons. In all other cases, the relationship is negative and monotonic.

Thus, we can reach at least one conclusion about the *simple* patterns of association between amount of viewing and reading achievement with considerable confidence. A small amount of viewing seems better than none, and a lot is worst of all; but this trend disappears with age, and older students show negative monotonic associations. It should be stressed that the extremely light or nonviewing groups are very small, rarely more than 5 percent of any sample. The lower scores in this group may merely reflect generalized lack of interest. In any case, this pattern appears with dramatic consistency across large samples from different parts of the country.

Still, as Hornik (1979) notes, a large percentage of these studies do not implement necessary controls. The lack of controls raises two serious potential problems. First and foremost is the threat that the generally negative simple associations between viewing and achievement are spurious; as we have seen, heavy viewers tend to have lower IQs and are likely to be of lower social status, and IQ or SES (or both) may be the true source of the observed relationship. High IQ and high SES students watch less television *and* get better achievement scores, and the apparent relationship between television viewing and achievement may be a spurious result of covariation with these (or other) factors.

But, secondly, even if an overall association disappears under controls, significant, meaningful, and nonspurious relationships can occur for specific subgroups. The association may only hold under certain conditions, or subgroup relationships may even go in opposite directions, suppressing or obscuring the overall, aggregate pattern. Unfortunately, few studies have gone about it either way, i.e., either partialing for other factors or looking within specific groups.

One encouraging exception is the Pennsylvania assessment project (Kohr 1979), based on 90,000 students from 750 schools, in grades five, eight, and eleven. Unlike some other statewide projects, the Pennsylvania researchers implemented a few controls, albeit one at a time. The general patterns described above remained remarkably intact within subgroups defined by residence (rural, suburban, urban) or parental educational level. There is, however, no apparent reason why residence should mediate this relationship, and our studies of New Jersey students (Morgan and Gross 1980) show that SES has relatively little effect either.

It seems far more likely that, if the overall negative correlations are to be explained by anything, the most likely source of spuriousness is IQ. The few studies that do control for IQ find that the zero-order correlations between viewing and achievement do become nonsignificant under this control (Childers and Ross 1973; Thompson 1964), but they are each based on only about

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100 cases. In the case of Childers and Ross, the small sample size meant that a relatively large beta coefficient (−.178) between television viewing and grade-point average (with IQ and Iowa Basic skills held constant) was nonsignificant; a larger sample would have demanded the opposite conclusion.

Our cross-sectional analyses of over 600 sixth through ninth graders also point to consistent negative and significant simple correlations between amount of viewing and eleven areas of achievement in three clusters of reading, mathematics, and language (Morgan and Gross 1980). We also found gentle curvilinearity in many cases, particularly for sixth and seventh graders. These simple correlations are consistently in the −.20 range, with the highest, for reading comprehension, at −.23 ($p < .001$). These correlations remain intact when controlling for social class, sex, grade in school, and other relevant variables, but controlling for IQ leads to a vastly different picture.

When IQ is held constant, most of these correlations become quite small, although all do remain negative. The simple correlations of viewing with mathematics scores, in particular, drop to almost zero when IQ is taken into account. On the other hand, associations between viewing and some achievement clusters do remain negative and significant (although reduced) when controlling for IQ. Foremost among the resilient correlations are language usage and structure ($r = -.12$, $p < .01$) and reading comprehension ($r = -.14$, $p < .01$). While the magnitude of these coefficients is not overwhelming, it does indicate some residual independent relationship between television and these achievement variables, above and beyond the effects of IQ.

One implication of this finding is that television viewing does not have a uniform relationship with all areas of achievement. Despite similar simple correlations across achievement areas and despite similarities under various other controls, controlling for IQ does greatly reduce many of the associations. (The correlation between viewing and the entire test battery remains small but significant when controlling for IQ: $r = -.08$, $p < .05$.)

These two correlations withstand controls for a number of other plausible sources of spuriousness. They persist at the same overall level when controlling for amount of nonschool reading, hours spent doing homework, and parents' reports of their own reading habits (e.g., number of magazines read regularly, time spent reading newspapers, etc.). They also hold up under some controls suggested by Hornik (1979), such as parental control over viewing and educational aspirations.

Beyond spuriousness, however, the more important question is that of specification: For which types of students (i.e., under what conditions) are we most likely to find these relationships? Examining these patterns within subgroups leads to some striking differences—and some surprises.

The most dramatic conditional relationships between viewing and achievement scores become evident within the low, medium, and high IQ groups. We saw that controlling for IQ through partial correlations tends to reduce or eliminate most of the coefficients; but it would be a mistake to infer from this result that the relationships are equal—and zero—for those in each IQ group. Rather, the resulting pattern is one of enormous variability between IQ groups, as shown in table 1. (The table also shows within-IQ group correlations further partialed for residual covariation with IQ scores.)

Strong negative associations between viewing and achievement persist among the high IQ group, for a number of achievement tests. These include reading comprehension, language usage and structure, and the entire test battery score, for both boys and girls; and vocabulary and mathematical concepts and problems for girls only. (The significant negative simple correlations for high IQ boys on mathematical computation, spelling, and language mechanics are reduced by the second IQ control.) This parallels Kohr's (1979) finding that the relationship between viewing and achievement is stronger, negative, and monotonic for students whose parents are better educated.

Yet, not all of the other correlations are zero. There are significant *positive* associations between viewing and both reading comprehension and vocabulary for girls with lower IQs. The interaction between viewing and IQ on these scores is significant; in contrast, Furu (1971) found no such interaction in Japan. Low IQ girls who are relatively heavy viewers actually score higher on reading comprehension and vocabulary (by about seven national percentile points) than low IQ girls who watch little.

So far, we have seen that sometimes the correlation between viewing and achievement is negative, and sometimes it is positive; we are still left with many coefficients of virtually zero. Yet, these zero correlations are often masking a *significant nonlinear relationship*. For example, for low IQ boys, the correlation between viewing and language usage and structure scores is −.03, while eta is .19 ($p = .06$). For low IQ boys on vocabulary, the correlation is −.05, and eta is .18 ($p = .05$); and for medium IQ girls on spelling, the correlation is −.02, eta is .18 ($p = .06$). There are other significantly nonlinear associations (e.g., high IQ boys on mathematical concepts and problems), but most are found among low and medium IQ students.

In all these cases—and others—the curvilinearity matches that of the statewide assessment projects; as viewing increases, so do scores, up to a point. At the

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Table 1

Television Viewing and Achievement: Correlations by Sex Within IQ Groups, and Partial Correlations Controlling for Residual Variation in IQ (N=625)

	Males			Females		
Correlation of TV Viewing and:	Low IQ	Med. IQ	High IQ	Low IQ	Med. IQ	High IQ
Reading Comprehension	−.13	−.12	−.25*	.16*	−.08	−.27*
Language Usage & Structure	−.14	−.07	−.26*	.04	−.12	−.15
Vocabulary	−.18*	.03	.02	.23*	.03	−.31*
Math Concepts & Problems	−.15	.04	−.08	−.00	−.13	−.20*
Math Computation	−.03	.10	−.19*	.02	−.09	−.05
Spelling	.08	−.07	−.18*	−.02	.01	−.10
Language Mechanics	−.15	.07	−.20*	−.01	−.09	−.05
Battery Total Score	−.19*	.02	−.22*	.08	−.11	−.21*
			Controlling for Residual IQ			
Reading Comprehension	.01	−.07	−.18*	.13*	−.06	−.25*
Language Usage & Structure	−.03	−.02	−.19*	.00	−.11	−.12
Vocabulary	−.05	.06	.12	.20*	.05	−.29*
Math Concepts & Problems	−.05	.07	.01	−.05	−.12	−.17*
Math Computation	.05	.16*	−.14	−.01	−.08	−.02
Spelling	.21*	−.03	−.11	−.11	.02	−.07
Language Mechanics	.01	.15	−.15	−.13	−.09	−.02
Battery Total Score	−.03	.09	−.14	−.01	−.10	−.19*

* $p<.05$.

higher levels of viewing, scores are markedly lower than they are at medium viewing levels.

Looking within IQ groups allows us to frame the finding of nonlinearity somewhat differently. To a certain extent, there is a tendency for viewing to be associated with the *center* of achievement; for instance, in terms of reading comprehension, heavy viewers within each IQ group have the score that is closest to the 50 national percentile rank of grade equivalents—the midpoint.

In sum, there is no one effect of television on achievement, nor is there even one relationship. Above all, the patterns vary tremendously by sex, by IQ group, and by the specific area of achievement. It seems likely at this point that younger students and those with lower IQ scores may perform better if they watch at least some television; older students and those with higher IQ scores show stronger, negative, and monotonic associations between amount of viewing and achievement. While there are a substantial number of replicated results, there are many exceptions as well, and that in itself may be the primary finding.

Adults

The 1978 NORC General Social Survey contains an adaptation of the Thorndike-Lorge Test of Verbal Intelligence. Respondents were given 10 "difficult" words and asked to choose the one closest synonym of 5 multiple choices. Table 2 shows the relationship between amount of viewing and adults' scores on this test.

Across all subgroups, the association between viewing and the number of words correctly defined is negative and monotonic. The mean scores of light, medium, and heavy viewers are significantly different within every group, except for nonwhites; still, even they show a negative and monotonic pattern. The relationship is also weaker for those with less education, perhaps owing to a "floor effect." Just as adolescents with higher IQs show stronger negative associations with achievement, college-educated respondents have a more powerful relationship.

These data suggest that certain aspects of the association between television and adolescents' reading and verbal skills apply to adults as well. Together, all the demographic variables and television viewing explain about 35 percent of the variance in word scores. Yet, even with all these powerful factors held constant simultaneously, amount of viewing makes a small but significant independent contribution to predictions of word-test scores.

Television and Reading

The findings concerning television and reading comprehension led us to a detailed examination of the relationship between amount of viewing and reported time

Table 2

Mean Number of Words (out of 10) Correctly Defined* for Light, Medium, and Heavy Adult Television Viewers** (NORC data 1978)

	Total		Light TV		Med. TV		Heavy TV			
	$\bar{x}$	(*N*)	$\bar{x}$	(*N*)	$\bar{x}$	(*N*)	$\bar{x}$	(*N*)	p	lin.¹
Overall	6.0	(1483)	6.5	(391)	5.9	(691)	5.4	(401)	.000	.000
Controlling for:										
Age:										
18–29	5.6	(401)	6.2	(88)	5.7	(181)	5.1	(132)	.000	.000
30–54	6.3	(649)	6.8	(198)	6.1	(319)	5.8	(135)	.000	.000
Over 55	5.8	(427)	6.2	(103)	6.0	(189)	5.4	(135)	.020	.010
Sex:										
Male	5.9	(624)	6.3	(185)	5.9	(303)	5.3	(136)	.001	.000
Female	6.0	(859)	6.7	(206)	6.0	(388)	5.5	(265)	.000	.000
Race:										
White	6.1	(1321)	6.7	(357)	6.1	(632)	5.6	(332)	.000	.000
Nonwhite	4.7	(162)	5.1	(34)	4.7	(59)	4.5	(69)	.360	.160
Education:										
No College	5.3	(986)	5.5	(208)	5.4	(459)	5.2	(319)	.090	.030
Some College	7.2	(495)	7.7	(182)	7.1	(232)	6.5	(81)	.000	.000
Newspaper Reading:										
Everyday	6.3	(854)	6.9	(223)	6.3	(411)	5.7	(220)	.000	.000
Sometimes or Less	5.5	(626)	6.0	(168)	5.5	(278)	5.1	(180)	.001	.000
Income:										
Low	5.3	(497)	5.8	(117)	5.2	(215)	5.1	(165)	.050	.020
Medium	6.1	(684)	6.7	(177)	6.1	(323)	5.6	(184)	.000	.000
High	7.1	(212)	7.5	(77)	7.2	(108)	6.2	(27)	.010	.010

* Adapted from a Thorndike-Lorge Test of Verbal Intelligence; reliability = .80–.85.

** Light viewers = up to 2 hours a day
Medium viewers = 2 to 4 hours a day
Heavy viewers = over 4 hours a day

¹ Significance of linearity. Deviations from linearity do not approach significance in any subgroup.

spent reading over a 3-year period (Morgan 1980). This analysis is based on the 216 students who participated in all 3 years of the study. While this clarifies some processes underlying the intricate relationship between viewing and reading comprehension, the examination of time spent reading adds its own perplexities.

In the first year of the study, we were not surprised to find that heavy viewers read less than light viewers ($r = -.18$, $p = .01$). Yet, in the second year, the correlation became moderately positive ($r = .17$, $p = .02$) and continued to rise in the third ($r = .22$, $p = .003$).

Even more striking is that we found a substantial *positive* correlation from first-year viewing to third-year reading time ($r = .30$, $p < .001$). This is barely altered by controls for IQ, SES, sex, and first-year reading. While there is a small but significant negative simple correlation from first-year reading to third-year viewing, this association is eliminated under controls.

Those who remain relatively heavy viewers throughout the 3 years of the study end up reporting more time spent reading, while consistently light viewers report reading less. As noted, in the first year heavy viewers read less than did light viewers (.75 hours a day to .96 hours a day, respectively). In the third year, these same heavy viewers increase to 1.23 hours a day, while the light viewers drop to .70. This pattern holds within every subgroup—including low, medium, and high IQ students examined separately, and the difference between the means and/or change scores is significant more often than not. A variety of techniques for longitudinal analysis point to the same conclusion: Television viewing exerts a significant, positive, longitudinal influence on time spent reading, and no causal influence from early reading time to later viewing is apparent.

This leads to the question of what this greater reading represents, and here our data cannot fully answer the question. We do, however, have information on the reading preferences of the students, collected in the third year; students were asked to indicate the kinds of things they like to read—adventure, family stories, poetry, etc.—in all, eleven categories of fiction and nonfiction.

There is little overall relationship between amount of viewing and the number of categories selected. When low, medium, and high IQ students are examined separately, however, a more complicated finding emerges. The more television low IQ students watch, the more "types of things" they like to read. This relationship is particularly evident for low-IQ females. Thus, low-IQ females score higher on reading comprehension and also like to read more kinds of things as viewing increases.

The specific preferences expressed by heavy viewers and by light viewers tend to differ as well. Light viewers choose science fiction, mysteries, and general nonfiction. Heavy viewers are significantly more likely to select stories about love and families, teenage stories, and true stories about stars. Unfortunately, we cannot specify whether they are reading books, magazines, comics, or something else; but the profile is suggestive of a similarity between the reported reading preferences of heavy viewers and common television content.

Among adults, McEvoy and Vincent (1980) report that there is no difference in amount of viewing between those who read periodicals and books and those who read periodicals only. Yet, those who do not read at all watch markedly more television than the other two groups. No information is presented about subgroups; the findings could result from spuriousness (stemming, for example, from education), or there could be specification effects, with positive associations between viewing and reading in some groups.

Regardless, it is surprising that those who are heavy viewers in early adolescence read more in later adolescence. This may be clarified by Robinson's (1980) finding that there has been a slight increase in the time adults spend reading books and magazines. He notes that, if people spend more time reading, it may mean widened horizons and expanded information, "but they may also be processing print content more superficially or less efficiently, as suggested by any shifts of reading from a primary activity to reading as a secondary activity" (p. 152). It seems reasonable to speculate that television may contribute to this "shift"; although adolescent heavy viewers may spend more hours reading, they certainly seem to be comprehending less.

Television and Educational Aspirations

Considerable sociological work has been done on the factors that influence the development and maintenance of educational aspirations as well as on the implications of those aspirations on subsequent attainment (see, e.g., Haller et al. 1974; Sewell and Shah 1967, 1968; Wilson and Portes 1975). Yet, in this extensive literature, Kerchoff (1977) provides one of the sole mentions of the possible role of mass media as an information source for educational and occupational goals and plans.

While there is considerable debate over the relative contribution of various factors in determining aspirations, aspirations themselves may have direct behavioral consequences for ultimate attainment (Sewell et al. 1970; Sewell and Portes 1969). Therefore, if television viewing has an impact on aspirations, it is not simply a "mere" attitude being affected but an outlook system with explicit behavioral implications.

We are mainly concerned here with the role television plays in the development of educational aspirations and expectations, but perspectives for future careers are clearly relevant.[3] For one thing, aspirations for schooling and projected job prestige are highly correlated (generally .50 to .70). For another, as we shall see, television's relationship with school plans takes on another dimension of meaning and interpretation when job plans are also considered.

Most previous work that could relate to television and future orientations deals only with occupation-related issues. Many content analyses, conducted over a number of years, have shown that television programing greatly overrepresents skilled and professional workers (e.g., Head 1954; Smythe 1954; Gentile 1961; Seggar and Wheeler 1973; Tedesco 1974; Jeffries-Fox and Signorielli 1979).

Beyond content analyses, some studies have focused on the extent to which television acts as a source of information about jobs (e.g., DeFleur and DeFleur 1967; Christiansen 1979; Jeffries-Fox 1978), or on the similarity between television portrayals and students' images of occupations (Jeffries-Fox and Signorielli 1979).

While television overrepresents professionals, its treatment of education is somewhat ambiguous. Television may idealize the process of education yet denigrate the pursuit of scholarly activities (Gerbner 1973). The contradiction in the image may lead to opposing and incompatible expectations. The emphasis on professionals might cultivate career projections of relatively higher prestige among heavy viewers, yet the symbolic functions of the portrayals of schools, teachers, and education may be to generate lower educational desires. Indeed, a small study of second to fifth graders (Morgan and Rothschild 1978) found that, while heavy viewers thought it less important to do well in school, they also tended to aspire to higher status jobs.

At the same time, adolescents manifest strong negative relationships between viewing aspirations cross sectionally. Gross and Jeffries-Fox (1978) present data from the second year of our 3-year study showing that heavy viewers (male and female) both want and expect to spend fewer years in school. This negative relationship is found for each of the 3 years of the study. The association with educational aspirations in particular remains strong and significant under controls for IQ, SES, sex, and age.

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[3] Occupational Aspirations are coded according to the Duncan scale of occupational prestige. Educational Aspirations are coded on a 7-point scale, from "don't want to finish high school" to "want to go to graduate school after college."

While this cross-sectional relationship does not appear to be spurious, it would be difficult to argue that lowered aspirations are a likely consequence of television content. It may be that excessive viewing in and of itself generates a sort of displacement of interest and reinforces a lack of ambition. But if television content has an effect on students' aspirations, it would seem far more reasonable to expect that the image of a world filled with professionals should be reflected in the selection of high prestige jobs and the desire for more schooling.

Longitudinal analysis of these relationships provides a powerful means to assess the independent contribution of television to students' aspirations over time. Such analysis corresponds more closely to an intuitive notion of "causality." It approximates the establishment of temporal order and helps reduce the threat that a causal inference is spurious. According to table 3, amount of viewing in the first year of the study has strong, negative, and significant correlations with second-year occupational and educational aspirations, for both males and females. This finding shows up with dramatic consistency with a wide variety of statistical techniques, including longitudinal hierarchical regression with an interaction term, analysis of covariance, and structural equation models based on disattenuated correlations. These associations are not explained by controls for first-year aspirations, IQ, and SES.

Thus, those who watch more television in early adolescence tend to aspire to lower status jobs and want to spend less time in school a year later.

But over 2 years, the patterns become strikingly different. The outstanding feature is that girls show positive associations from first-year viewing to third-year aspirations, particularly for occupations. These positive coefficients only emerge when earlier level of aspiration, IQ, and SES are held constant. In contrast, boys' significantly negative simple associations disappear under controls.

Statistically, this means that a significant portion of "new information" or "change" in aspirations (i.e., above and beyond what early aspirations and demographics would predict) is explained by earlier viewing behavior. In short, heavy viewing has a short-term (1-year) negative effect on the aspirations of both boys and girls, but over 2 years, girls who watch more television have higher goals for both schooling and career.

Beyond this sex difference, different types of students might be expected to show different relationships between viewing and educational aspirations. Given an ambiguous message, different students might attend to different components of the overall image of education. For example, there is an almost significant interaction between amount of viewing and IQ in predicting school goals over time (partial$=.14$, $F=3.40$, $p<.10$): As IQ increases, so does the 2-year positive effect of viewing on educational aspirations.

As IQ increases, viewing may perform some "reinforcement" function. High-IQ students, in all likelihood, receive numerous messages about how far they should go in school. They may be more likely to absorb the implication that sufficient education is necessary to enter those

Table 3

Correlations Between Early Viewing and Later Aspirations (N=216)

	Occupational Aspirations			Educational Aspirations		
	Overall	Males	Females	Overall	Males	Females
Correlation of First-Year Viewing With Second-Year Aspirations:						
Simple r	−.26***	−.26**	−.27**	−.26***	−.28***	−.24**
Controlling for First-Year Aspirations, SES, and IQ	−.17**	−.17*	−.18*	−.21***	−.24**	−.18*
Correlation of First-Year Viewing With Third-Year Aspirations:						
Simple r	−.07	−.17*	.05	−.13*	−.28**	−.10
Controlling for First-Year Aspirations, SES, and IQ	.11	−.08	.26**	.04	−.07	.15*

*$p<.05$. **$p<.01$. ***$p<.001$.

prestigious jobs they see on television. More generally, when other factors in their environment are urging them toward more schooling, any messages on television which point in that direction may be (somewhat selectively) perceived, and the positive effect on school goals may be amplified. In any case, the finding that heavy viewing is more likely to lead to the desire for more education among high-IQ students is particularly intriguing, given the fact that high-IQ students show the strongest negative associations between viewing and achievement scores.

The longitudinal associations between viewing and aspirations take on a variety of forms within other subgroups. For example, the relationship with school goals is positive when parents do not take an active role in their children's viewing; when they do participate (by either being restrictive and protective about viewing habits or explicitly using television as a way to impart information to their children), the relationship over time is zero. If lack of parental involvement in viewing enhances cultivation (see Gross and Morgan in press), then this is another example of that phenomenon. Moreover, a low degree of peer interaction can also amplify this association. Rothschild (1979) found that third and fifth graders who are less integrated into cohesive peer groups also show a positive association between amount of viewing and projected job status.

Similarly, the students' own "involvement with television" (measured by a variety of dimensions of immersion, identification, and habituation beyond hours of exposure) mediates the relationship. The longitudinal relationship between amount of viewing and projected job status is positive for those who score high on the involvement index, and negative for less involved students. Yet, the connections with school plans are negative only among the highly involved. In other words, greater "involvement" with television seems to help cultivate conflicting goals, i.e., the desires for higher job status but fewer years in school.

Thus, the effects of television viewing on educational aspirations are mediated by demographic factors (like sex and IQ) as well as by family or "personal" factors (like parental participation, peer interaction, or "involvement" with television). But the most critical consequences of the impact of television on aspirations become evident in the larger context of other plans, expectations, and outlooks. Specifically, when these patterns are examined in light of students' sex-role stereotypes and family-life expectations, we see that television may contribute to incongruent and opposing role projections—for girls. Out of complex multidimensional triangulations and mutually conditioning influences emerge serious conflicts and logically opposing aims in girls' outlooks and aspirations.

For example, television seems to exert a considerable influence on the development and maintenance of sex-role stereotypes among girls, particularly the notion that women are happiest at home caring for children (Gross and Morgan in press). Also, television cultivates both the desire to get married and have children soon and the expectation of having a large number of children (Morgan and Harr-Mazer 1980). Clearly, for girls, the notion that women should stay home with children, the desire to get married and have children early, and the wish for large families are generally incompatible with high ambitions for school and career.

Despite the incompatibility between these behavioral expectations, the cultivation of the desire for higher status occupations and more education cuts across these potentially mediating influences. Even *more* sexist girls show positive longitudinal connections between viewing and aspirations. Television also cultivates higher aspirations among girls who desire early marriage, early childbirth, and large families.

But there may not be any perceived conflict between these notions and goals. "Sexism" represents conceptions of social reality; aspirations are a personal concern. Heavy-viewing girls may well want to go on in school and work at high-status jobs themselves, yet they easily believe that women achieve ultimate fulfillment through homemaking and motherhood. The cultivation of a given behavioral expectation does not preclude the cultivation of an incongruent image of social reality. Girls' personal aspirations may not be affected by the undercutting image of women on television because (as a number of studies have shown) they may be more likely to emulate and identify with male models anyway.

The conflict between aspirations and family plans may be more problematic. Few females will be able to handle the responsibilities and demands of early marriage and large families and at the same time spend more years in school and become high-level professionals. One of these opposing expectations may ultimately have to give.

These arrays of role projections are generally congruent for boys. Heavy viewing among boys can predict a syndrome of early marriage, large families, and lower aspirations, although all relationships are somewhat weaker for boys. But few girls may be able to meet these opposing expectations. Heavy viewing among girls may lead to a variety of problematic situations, with no easy solution. Given our present social situation, it is extremely difficult for women to mix family responsibilities with spending more years in school.

It should be stressed that one of the key features of these patterns is that television seems to contribute to the conditioning as well as the dependent variable. In terms of these triangulations, television may have an impact on both the conditioning influence and the belief system which it helps maintain and by which it is reinforced.

Discussion

The data presented in this review focus mainly on what Hornik (1979) calls "input-output relations"; that is, they are intended to establish empirical relationships, and they bypass the problem of understanding the processes and mechanisms underlying the associations. This is partially due to the fact that research on these processes is just beginning; even the best of it does not provide unambiguous evidence about dominant causal mechanisms. Still, it is unlikely that any one explanation is the primary phenomenon; Hornik notes that "specification is the order of the day," which we see in terms of mutual interaction and reinforcement.

Let us begin with the negative relationships between viewing and achievement. The data suggest that these relationships are not spurious. But they provide no evidence to support the proposition that television viewing leads to lower scores in certain cases, or other alternatives—that students with reading problems simply watch more television, or that both happen.

Even if viewing does contribute to weaker comprehension and diminishes competence in related verbal skills, it could happen in a number of ways. For one, television could simply reinforce reading problems by displacing time spent reading.[4] As with any other skill, reading requires constant practice, and one does not generally get much practice reading while watching television. Further, heavy viewers often say they read or do homework while they are watching. The acquisition and maintenance of these skills could suffer in the presence of such a strong distraction.

The "language" of the medium may also contribute; that is, there may be cognitive effects of the symbolic structure of television, as Salomon (1979) suggested. Since television viewing is "easier" than reading, in that it does not require the same degree of sustained concentration for comprehension, heavy viewing could reinforce impatience with reading, and skills would remain underdeveloped. This is slightly related to what Hornik calls "intolerance for the pace of schooling" hypotheses. These hold that the conventional action and format structure of television and/or the intellectual "simplicity" of most television programs can hold back imagination, lead children to demand continuous action, and generate frustration with the rigors of learning and plot developments that take time. (Hornik finds the actual evidence for this position and several others sorely lacking and unconvincing.)

Yet, we also must deal with the positive longitudinal link between viewing and reading time. It is possible that for some students heavy viewing during early adolescence is symptomatic of a certain intellectual curiosity,[5] and television viewing thereby may be stimulating and encouraging subsequent reading. In addition, the longitudinal relationship between viewing and reading could be explained by some hypothetical media use syndrome. During early adolescence, students may be either heavy viewers or readers, but not both (hence the negative first-year correlation); 2 years later, students might be heavy or light users of both media at the same time (hence, the positive third-year correlation).

This possibility is plausible and does fit the data, but it fails to clarify why the lagged relationship from viewing to reading should be positive. Perhaps, given IQ and achievement general trends, heavy viewers must spend more time in order to accomplish the same amount of reading. Again, much of the reading done by heavy viewers may accompany viewing. Further, this would fit with our finding of a modest positive relationship between amount of viewing and reported time spent doing homework.

We also find some positive associations between viewing and achievement among those with lower IQs. It may well be that low-IQ students are actually helped by television viewing; at the least, low-IQ students who do not watch much may be particularly uninterested and unmotivated. The tendency for heavy viewing to have very different implications for students of different IQ levels emerges for certain school-related attitudes as well as for achievement. For example, high-IQ students who watch more television are more likely to cite "being a good student" as one of four least desirable qualities. Yet, heavy viewers in the low-IQ group show the opposite pattern; they are less likely to derogate the idea of being a good student.

In terms of aspirations, the patterns are highly complex. We see strong negative cross-sectional and short-term associations that become positive over 2 years.[6] For boys, heavy viewing in early adolescence has no impact on job or school goals 2 years later. For girls, viewing cultivates the desire for more schooling as well as traditional sex-role stereotypes and the desires to get married and have children early.

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[4] Hornik (1979) discusses the possibility of displacement more in the sense of before-after television comparisons and concludes that the evidence for such displacement is weak, because "there was not much reading before television and there is not much now."

[5] Zuckerman et al. (1980) found amount of viewing to be positively related to "enthusiasm in school" among third to fifth graders.

[6] Bayer (1970) found that marriage plans have a substantial independent effect upon educational aspirations, above and beyond IQ and SES: Those who seek early marriage tend to express lower aspirations, and those who expect to delay marriage and age of childbirth plan on spending more years in school. This may help explain the negative cross-sectional relationships between viewing and aspirations.

But the primary finding is that not only the intensity but even the direction of television's consequences for education—both achievement and aspirations—seem to depend on a wide variety of other factors which mediate, condition, enhance, diminish, or reverse the associations. Television viewing may be seen as a "quasi-demographic" variable which has one set of implications for some, and another set of implications for others. It consistently makes a difference, although that difference is clearly not the same for all students. Television viewing may lead to conflicts in behavior, attitudes, and behavioral expectations. We can be fairly sure that at any given time, adolescents who watch more television will score lower in achievement, particularly for reading, and that they will express lower ambitions for both schooling and career. But heavy viewers may also ultimately spend more time reading, and, if they have lower IQs, their reading scores will be higher; and, if female, they will express higher educational aspirations than do light viewers 2 years later. The questions of how the underlying processes of interaction with other social, personal, and family-related factors actually work are still wide open.

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Television Literacy and Critical Television Viewing Skills

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> Television often exposes children to adult actions and relationships for which they are unprepared. They are thrown into an adult world long before they have the information and maturity to cope with it. . . . How television affects a child will depend on how the child interprets what is viewed and the use the child makes of that information. Parents and other adults can be the determining factor in making television a positive learning experience (Southwest Educational Development Laboratory 1979, p. 1).

Several commentators have suggested that research on the impact of television may be more revealing of ourselves and our culture than of the effects of television itself (e.g., Newcomb 1976). As suggested by the above paragraph from a set of educational materials for parents, our concern regarding the possible effects of television reveals our shared concerns for the vulnerability of young children, the use of which television is put, and the ultimate responsibility of the parent in structuring a child's life. The concern for critical television viewing skills is further revealing. Because there is no visible product or benefit produced, many people feel guilty about "wasting" so many hours watching television. Often adults will not admit to regularly viewing television. The ethic of having something to show for one's efforts and of not wasting time is traceable at least back to Puritanism of three centuries ago. Similarly, our approach to coping with the problem is revealing of ourselves. Purposeful viewing and critical analysis are a heritage that can be traced to classical Greek thought (Dondis 1979). Rather than fall victim to a persuasive commentator, we should analyze, evaluate, and compare the message offered by television. As Plato wrote in the *Republic* (Book VII):

> If simple unity could be adequately perceived by sight or by any other sense, then there would be nothing to attract towards being; but when there is some contradiction always present, and one is the reverse of one and involves the conception of plurality, then thought begins to be aroused within us, and the soul perplexed and wanting to arrive at a decision asks, What is absolute unity?

The analysis of the perceived world around us has been expanded and formalized by many. Aristotle, for example, distinguished among three levels of thought in his account of how the mind operates to produce knowledge. From the raw materials of sensory experience, the mind forms ideas. Ideas in turn are the basis from which the mind forms judgments. When one judgment then becomes the basis for assenting or denying another statement, the mind is using a third level of thought—inference. At this level, thinking involves generating reasons for what we think. What we think may not be either true or false; it may also be either logical or illogical. Thus, Aristotle's ideas on the law of contradiction and the rules of the syllogism have helped form our current concept of critical thinking (Aristotle, *On Interpretation, Prior Analytics, Posterior Analytics*). The work of John Dewey is a more contemporary reflection of our shared ethic regarding critical thinking:

> The first distinguishing characteristic of thinking then is facing the facts—inquiry, minute and extensive scrutinizing, observation (Dewey 1948, p. 140).

> Thinking which is a method of reconstructing experience treats observation of facts, on the other hand, as the indispensable step of defining the problem, of locating the trouble, of forcing home a definite, instead of a merely vague emotional, sense of what the difficulty is and where it lies (Dewey 1948, p. 141).

Although critical thinking does indeed have deep roots in our culture, few people realize that the application of critical thinking to the context of television viewing also has important antecedents. Literary criticism is the application of critical thinking to the analysis of creative communication. Certainly, there are numerous parallels between literary criticism and critical television viewing. Cairns (1961, p. 1) wrote:

> From the beginning criticism has exhibited two aspects. In one it has compared and judged; it has attempted to isolate the values of literature and to determine whether the specimens it appraises are good or bad.

Literary criticism, however, goes beyond the mere analysis of the verity of facts. Art attempts to communicate a sense of life, whether it be the inescapable limits and mortality of life or its beauty and inspiration. Thus, literary criticism attempts to appreciate insights communicated through art.

Television is a relatively new and still developing communications technology and industry. In less than three decades, television has been so absorbed into the fabric of our society and culture that it is now difficult to imagine life without it. Television has become an indispensable member of our families. Adults watch many hours of television each week, and children spend an ever-increasing number of hours mesmerized by television. Many parents are apprehensive about the effects of television on their children's social attitudes and behavior and the impact of television viewing habits upon the family's lifestyle. One response has been to lobby for greater citizen control of the television industry. This, however, threatens a basic value of our country—the individual right of people to communicate freely and to receive ideas and information. The alternative approach of developing greater sophistication among television consumers is being widely accepted. Adults and children are encouraged to be more literate with the televised medium and to use critical viewing skills.

Much of the momentum for television literacy and viewing skills has come from the large literature of television research. Surprisingly though, little research has been conducted specifically on viewing skills. With the growing public interest in critical viewing skills, there is a need to carefully examine the current state of knowledge.

Television Literacy

Television literacy is the understanding and appreciation of television programing. This includes an awareness of how programing is produced and broadcast, a familiarity with the various formats used in television, and ability to recognize the overt and covert themes of television programs and commercials, and an appreciation of television as an art form (the ability to recognize excellent versus poor television programing in a number of dimensions). Zettl's (1973) writings in esthetic pragmatics demonstrates the importance of television literacy and the necessity for critical viewing skills:

> There are, of course, subtle aesthetic variables that we can use to produce a specific aesthetic response in the recipient, even if he is not consciously aware of these variables. In short, we can manipulate a person's perception, and ultimately his behavior, by a precise, calculated application of aesthetic variables and variable complexes (Zettl 1973, p. 8).

The ability to accurately perceive and interpret televised presentations appears to be a function of experience and cognitive development. There is some, though admittedly thin, evidence that the ability to "read" relationships in pictures is experientially based. Kennedy (1974) and Pick (1976), in reviewing cross-cultural research on picture perception, found that uneducated primitive people are usually able to identify objects in pictures but do not understand depicted relationships between objects. However, primitive people who had participated in some form of organized education could interpret pictorially presented information. Pick (1976) concluded that some experience with pictures is required to learn the "rules" of visual communication. Similarly, there is some evidence within the American culture that educational experience with pictures increases children's ability to benefit from pictorial presentations. Reese (1974) in a quasi-experimental study found that, after the introduction of *Sesame Street*, children appeared to perform better in learning tasks using visual elaborations. Pressley (1977) noted that "there can be no doubt that *Sesame Street* alumni have plenty of experience reading pictures."

The ability to interpret visual presentations increases with age. Clearly, the most important factor leading to people's ability to interpret visual presentations is cognitive maturity. The ability to understand and appreciate television programing increases with age. Young children have great difficulty in realistically interpreting most elements of television programs and commercials. For example, many young children believe that the program *Mork and Mindy* takes place in the house where the actress who plays the role of Mindy lives. A study by Meyer (1976) found that children as old as 12 failed to understand even basic elements of the plot of an episode from *All in the Family*.

In laboratory learning tasks such as paired-associated learning, the usefulness of pictorial presentations is found to increase with children's age from nursery school through the third grade (Rohwer et al. 1975). In terms of learning facilitation, however, most studies have found pictorial presentations quickly reach a maximum effect, approximately the first through the third grade (Holyoak et al. 1972; Odom and Nesbitt 1974). With more complex visual presentations, such as general television fare,

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Collins (1970) found comprehension, retention, and drawing inferences to increase steadily with age across the grade school to high school age range. Indeed, the wide range of learning and comprehension of televised portrayals appears to increase with age (Collins et al., 1978; Wartella 1979).

The sophistication that television viewers acquire with experience and maturity involves a number of critical viewing skills. It is these skills, as well as the analogous critical thinking skills that develop as a child matures, which are essential in enabling people to respond to televised portrayals and productively integrate television into their lives.

Critical Television Viewing Skills

In the past 2 years, there has been a national surge of interest in critical television viewing skills. Many divergent groups, including parent-teachers associations, school districts, and youth groups, have expressed a concern that television viewing be a positive beneficial experience, especially for children and youth. Several organizations have developed educational materials, family guides, and workshop manuals to encourage selective planned viewing, to encourage awareness of the differences between cartoons and realistic portrayals, commercials and programs, news and docu-dramas, and to encourage parental involvement in children's viewing (e.g., National PTA, Prime Time, Media Action Research Center). There, however, has been little empirical research on critical television viewing skills. Virtually all of the efforts to develop materials for children, parents, and teachers have been based upon editorial evaluations of the need. Nonetheless, it is important to be knowledgeable about how these various organizations and individuals have conceptualized the nature of critical viewing skills.

Anderson (1980) suggests that, while there are many skills and facts which need to be taught in a critical television viewing curriculum, there are four underlying constructs: intervention, goal attainment, cultural understanding, and literacy. Curricula using the intervention construct, in Anderson's conceptualization, emphasize that television does things to the viewer, and intervention vis-a-vis instruction will lead to different consequences. Students are taught about production techniques, program formats, the purpose of commercials, etc. The hope is that the information and understanding acquired will be applied to students' everyday viewing. Curricula based upon the goal-attainment construct first ask students to consider their reasons for viewing television. The curriculum materials then encourage students to develop more productive objectives for viewing television. WNET, under a contract with the U.S. Office of Education, exemplifies this approach, "This curriculum will provide your students with the inner resources for making their own decisions about the television programs they watch." (WNET 1979, p. ii). The cultural-understanding construct portrays television as product and purveyor of contemporary (and popular) culture. From this perspective, curricula encourage the use and appreciation of television as one of many forums of esthetic expression. The visual-literacy construct, as presented by Anderson, is focused on the need to understand the many messages embedded in television programing and how television is used to communicate messages. In such a curriculum, students not only learn about television but may also learn to do television (e.g., Media Literacy Project, Unified School District 497, Lawrence, Kans.). Despite the appeal of this taxonomy, the four constructs do not appear to be separate or separable issues, but to be facets of a single, though complex, issue. In helping students understand the distortions of the televised medium, a teacher would concurrently need to help students understand how the medium can be used to communicate. Similarly, to help a student formulate his or her viewing preferences, a teacher would want to encourage the student to see television as an art form in which there is not only good and bad art but there are also artistic alternatives to television. A curriculum could not pursue any single construct without simultaneously pursuing all four.

There have been several attempts to articulate the specific critical television skills. Singer et al. (1980) have outlined 10 objectives of their critical viewing curriculum:

Understand the types of programs.
Understand that programs are created.
Understand the electronics of television.
Learn what aspects of a program are real and how fantasy elements are created.
Learn the purpose and types of commercials.
Understand how television influences a person's feelings and ideas.
Become aware of television as a source of information, and the use of stereotypes on television.
Understand the differences between violence portrayal on television and violence in life.
Become more aware of personal viewing habits.
Use television in a language arts framework.

Anderson and Ploghoft (1978), in their receivership skills curriculum, identified six objectives:

Ability to describe own television viewing habits.
Ability to describe why a program is selected.
Ability to identify the role of television in personal life, amid the activities it competes with.
Ability to describe the consequences of viewing and the other activities with which television competes.
Ability to identify program content characteristics.
Ability to identify uses of different programs.

The U.S. Office of Education sponsored four major projects, beginning in 1978, to develop materials for students and their parents and teachers, to assist and encourage them in using critical television viewing skills. Probably the most comprehensive statement regarding critical viewing skills was prepared by Withrow (1980) the USOE project monitor:

> 1. A knowledge of the special effects of television production. TV is both more and less than real life. Time and space are significantly compressed in television productions.
> 2. A knowledge of the social trade-offs involved in television viewing. Excessive television viewing can affect mental health. Things are left undone as a result of habitual viewing. TV viewing is essentially passive as opposed to other activities that often require participation.
> 3. A knowledge of commercial influences on television and the motivating factors involved in commercial support of television. The value systems portrayed on television may not be acceptable to all people because production is directed to the largest possible audience.
> 4. A knowledge of individual and group patterns of viewing. A knowledge of one's own individual viewing habits is necessary. A knowledge of the patterns of individual age groups and their importance in the television marketplace will also enhance understanding.
> 5. An ability to recognize information and to differentiate between information and propaganda. Commercial advertisements frequently carry information, but they are also designed to project the information in the most attractive and subtle manner. Viewers need to recognize the role of humor, sex, and the bizarre in the advertisement's seduction of the consumer.
> 6. An ability to understand and evaluate opposing views on news and documentary programs. An understanding that time constraints of television news programs limit indepth reporting is important. Usually there is an effort to provide editorial balance, therefore different commentators may have strongly different ideas and perceptions.
> 7. An ability to understand the differences between written and television drama. How does a book differ from a drama on television? What are the underlying principles in building a good story on television? How does a television presentation differ from the stage and film story? Television is a little window on the world; whereas the stage and film provide a large landscape for vicarious experiences.
> 8. An ability to understand one's own uses of television. Why do you watch television? What do you get out of it? Is it a diversion from the busy schedule? Do you use it as a source or a sampler to stimulate you to a deeper study of a specific issue? Is it your main source of information outside your own experience?
> 9. An ability to understand the consumer's role in television. How can you influence what's on television? What is your place in community based television?
>
> At the elementary level, young elementary-age children can and should learn that television distorts the real world. They can at early ages test the television world against the real world. With parental guidance, they can use television wisely. The family, the school, and youth-serving agencies can make television viewing more responsive to the needs of a growing child.
>
> At the middle-school level, which encompasses the upper elementary levels and junior high school, children can be self-motivated in establishing priorities on the quality and quantity of their television watching. They are interested in how television is put together. How do the producers make the Six Million Dollar man jump tall buildings? They want to know how an idea is formed for a show and how it gets put into the dramatization that is shown in their home. They are interested in some of the major issues in television. Should children's advertisements be limited? What are ratings, and how do they affect the program schedule? They like to critique programs.
>
> At the secondary level, the high school-age youngster is sensitive to alternatives to television watching. This age range is the least likely group to watch television. They are involved with social and sports activities as well as the demands of their school and work lives. They are in a position to begin to analyze television and to make judgments that will affect their habitual use of television. They can understand and explore in more detail the wide range of potential dramatic programs. They are capable of analyzing different opinions and viewpoints in news and special events programs. In effect, they can be sophisticated users of television. They can understand the ratings systems and the commercial impetus behind the television industry. They are aware of (and can be taught to understand) the political-social aspects of television.
>
> At the post secondary [level, materials can be] directed towards an understanding of one's own use of television and the importance adults play in monitoring children's use of television. Emphasis is placed on the societal-family interplay with television. What does it mean as a social event when more than 100,000,000 people watch ROOTS? Does it lead to a further study by the viewers of the issues involved? There are interesting indicators such as an increased sale of the books, increased interest in tracing one's own roots, and a spin-off of reading in related areas which resulted from the showing of ROOTS. The post secondary materials [can] deal with some of the limitations of news programs, propaganda, psychological impact of television programs and the prosocial effects of dramatic series, soap operas and talk shows (Withrow 1980, pp. 4–6).

Only one research study has attempted to identify the number and nature of critical television viewing skills. Dorr and her colleagues conducted a 2-year study involving 80 black, Puerto Rican, and anglo adolescents and adults in the first phase, and 99 black and anglo boys and girls in kindergarten, second, third, and sixth grades in the second phase (Graves 1976*a*, 1976*b*; Leifer 1976; Lemon 1976). Five critical viewing skills were identified:

Explicit and spontaneous reasoning.
Readiness to compare television content to outside sources of information.
Readiness to refer to knowledge of the TV industry.
Tendency to find television content fabricated and inaccurate.
Less positive evaluations of television content.

These five viewing skills represent a distillation of extensive interviews with the children, adolescents, and adults who participated in the study. An attempt was made to verify these results. Dorr et al. (1980) reported that kindergarten, second, and third grade students who used a curriculum which taught eight facts about the production of entertainment programs and the television industry's economic system were significantly more likely to make the judgment that the elements of a television program viewed by the children were "pretend."

The information generated by this research is an important beginning. It would also be useful to consider some of its limitations. In general, the five "critical evaluation skills" identified by Dorr et al. do not appear to be skills per se. "Explicit and spontaneous reasoning" appears to be a skill, probably analogous to a critical thinking skill. However, the wording "explicit and spontaneous" suggests an interpretation that this critical element is a personal disposition rather than a skill; i.e., some people are more inclined than others to use reasoning-process skills while watching television. Nonetheless, the observation that the use of reasoning skills leads to better comprehension of television programing is significant. The other four identified "skills" do indeed appear to be personal dispositions, personality traits, or attitudes rather than skills. People's tendencies to find television content to be fabricated and inaccurate is probably more accurately characterized as a personal disposition or personality trait to dislike or distrust television. This in turn enables people to interpret televised presentations more accurately. Similarly, the tendency to have less positive evaluations of television content is an individual difference variable that disposes people to be more skeptical and thus less vulnerable to the persuasive messages imbedded in television programing. The identified "skill" of readiness to compare television content to outside sources of information is also an individual-differences variable in that some pople are quicker to compare than others. Nonetheless, it does suggest that the process of comparing televised information with that from other sources enables people to develop a more accurate assessment of the television programing. The skill of readiness to refer to knowledge of the television industry in reasoning about television content is also a personal disposition, though it also suggests that knowledge about the industry enables a person to interpret televised presentations more accurately. However, neither knowledge nor the readiness to use knowledge would traditionally be considered a skill.

To summarize the current state of knowledge, little is yet known about critical television viewing skills. The work of Dorr and her colleagues provides some empirical information on the nature of critical viewing skills. The use of reasoning skills while viewing a program helps people to comprehend more of the program content. The orientation of being skeptical of television content appears to help people to be more perceptive of the many elements of television programing. Finally, general knowledge of the television industry appears to enable a person to be a more sophisticated viewer. These results appear to support the nonempirical approaches to defining critical viewing skills. While there is a high degree of commonality among these attempts to define critical viewing skills, Withrow's definitions are the most comprehensive. In contrast, the definitions proposed by the Singers and by Anderson and Ploghoft appear to be incomplete. However, much of the work on critical television viewing skills has close parallels with an extensive literature on critical thinking and literary criticism. Both the research and the efforts to develop curriculum materials could greatly benefit from use of these two well-developed literatures. Withrow (1980) probably is the best integration to date of the scientific information and the principles of literary criticism.

Teaching Viewing Skills

A conference on television and learning was conducted by the National Institute of Education (NIE) to consider the question of critical viewing skills. The conference (NIE 1978) suggested that students should be taught to select, understand, and retain useful television content; critically evaluate "information" presented in television programs; and appreciate the craft and construction of television programs. "If courses were successful, this would increase the frequency with which students derive useful information from their viewing, increase their selectivity in accepting and rejecting television's 'information,' and increase their appreciation for an inclination to view 'good' entertainment" (NIE 1978, p. 11).

Several curricula on critical television viewing skills have been recently evaluated. The importance of such evaluations is that the extent to which curriculum materials can help students develop such skills partially validates the conceptualization of critical viewing skills. As with the study of Dorr et al. (1980), these evaluations have provided positive support for critical television viewing skills. The curriculum developed by the Singers, for example, with the support of the American Broadcasting Company, proved to be effective. Singer et al. (1980) reported that in a study involving 232 third, fourth, and fifth grade students, who worked with the critical viewing skills curriculum, demonstrated a significantly greater increase in knowledge about television. The curriculum was composed of eight 40-minute lessons: Introduction to Television, Reality and Fantasy on Television, Camera Effects and Special Effects, Commercials and the Television Business, Identification with Television Characters, Stereotypes on Television, Violence and Aggression, and How Viewers Can Influence Television. The students who used the curriculum also learned more television-related vocabulary words. Importantly, the critical viewing skills appeared to generalize to other televised programing.

Anderson and Ploghoft (1980), in an evaluation of the critical receivership skills curriculum, developed a test called the Television Information Game. Students in the third, fourth, fifth, and sixth grades demonstrated significant post-test gains. The third-grade students performed at sixth-grade levels, following use of the curriculum materials. However, while students in other grades also had significantly higher performance levels after completing the curriculum, many of the post-test scores were not higher than the pre-test scores of the next higher grade—a result that could be simply accounted for by maturation. This prompted Anderson (1980) to comment that neither the provision of information nor the mastery of the information is sufficient to promote critical viewing skills; instruction should be keyed to the students' developmental needs.

Parents and Significant Others

The role of parents, teachers, and older siblings is probably the most important factor determining how children use television, how the television programing affects children, and how children use critical viewing skills (Corder-Bolz 1980*a*). Singer et al. (1980) reported that "the parents were very influential models for the amount of viewing and attitudes towards television that children displayed. . . . the parents apparently influenced their children's perceptions of the importance of television."

Possibly the earliest evidence of the significance of family interaction during television viewing is found in Ball and Bogatz's (1970) first-year evaluation of *Sesame Street.* Students who learned more came from homes where the program was watched by both mother and child and where the mother talked with the child about the show. Later, Salomon (1974) found that, when mothers were encouraged to watch *Sesame Street* with their children for 2 hours a week, these children (particularly the lower-class group) developed more of the specific cognitive skills the programs were designed to teach.

In addition to family interaction during television viewing, parental control of children's television viewing is important. Fifteen years ago Hess and Goldman (1962) observed that mothers were relatively apathetic about what effects television might have on their children. These researchers reported that only a small proportion of mothers were enthusiastic about children's programing or were significantly worried about the potential effects of types of programing upon their small children. However, recent evidence suggests a great increase in parental concern, e.g., the hearings on violence sponsored by the National Congress of Parents and Teachers.

Barcus (1969) reports that parents controlled their child's television viewing for the following reasons: (1) The child may be prematurely exposed to the adult world; (2) television is less important than other activities (such as schoolwork and outdoor play); and (3) they are fearful that their children might imitate behavior in programs with themes of violence. However, in three studies (Albert and Meline 1958; Greenberg et al. 1971; Rossiter and Robertson 1975), there is a considerable lack of correspondence between parents' and children's estimates of parental control of television viewing.

Rossiter and Robertson (1975) posit there are four possible areas in which a parent can intervene and control the child's viewing: (1) the amount or number of hours of television exposure; (2) the amount of viewing supervision (i.e., parental control of content); (3) parental co-viewing of the child's television viewing; and (4) parent-child interaction, i.e., the frequency of intrafamily activities other than television watching.

Several studies appear to support the thesis that parental involvement is essential. Perhaps the earliest study is one by Hicks (1965), in which an adult's comments (either positive or negative) about a program had an effect on the degree of aggression exhibited by children in a post-test situation. Those children viewing the program with an adult who made positive comments about the aggressive action showed more aggression than those children who heard the adult making a negative evaluation of the aggressive action. The least empirical, but one of the most provocative, studies is one by Safran (1976) and is the only study in the literature where there was a joint effort by both parents to control the number of hours each day that their child could view television. For a 4-week period, the parents of a group of 15 preschool-age children limited their child's viewing to just 1 hour a day. The parents kept diaries on what happened as they curtailed their child's viewing. Positive effects were reported by almost all the families in the study, and some dramatic effects occurred in several: A once passive small girl became less shy and more outgoing; an overactive and aggressive boy became calmer and less hurtful to his pets; and, for one school-age child in the study, grades improved appreciably once homework was no longer done in front of the television set. Most importantly, the families had an increase in intrafamily activities and found that communication between all members of the family was increased and improved.

Apparently, not only parents but also other adults can affect what a child learns and retains from television content. Singer and Singer (1974) included in one of their treatment groups an adult who involved herself with the ongoing program and who called the children's attention to specific points. The 3- and 4-year-olds in that group gained significantly more knowledge from the episodes of *Mister Rogers' Neighborhood* than did other groups.

In 1976, Walling reported the results of a study in which the effects upon first-grade students whose mothers interacted with their child during routine television viewing were contrasted with the effects upon children in a "noninteraction" group (the mothers were present but not interacting during viewing) and with the effects upon students in a "control" group who did not view television during the experimental period. After the 1-week experimental period, the students in both the interaction and noninteraction groups had acquired a greater ability to complete social problem-solving tasks. This was interpreted by Walling as indicating an important positive social learning aspect of television programing. In addition, the gain for the interaction group was substantially greater, thus indicating that the mother could successfully assist her child in acquiring critical viewing skills.

As important as the Walling study is, it suffers from some methodological weaknesses, including a small sample size, (i.e., from seven to nine students in each group). A larger study to explore the role of adults' mediation was completed by Corder-Bolz and O'Bryant (1978). Thirty-two preschool students, who were 4 to 5 years old, were randomly assigned in same-sex pairs to one of two experimental groups. The students watched an episode from the *Adam-12* series and the commercials used at the time the show was aired in the early spring of 1976. The *Adam-12* series is considered to be a family-hour program and is notable for its lack of violence and its orientation toward children. The particular show used was one which dealt with students being truant from school and subsequently getting into trouble. In the first group, the pairs of students watched the 30-minute episode with a well-liked preschool teacher who made neutral comments about the program (e.g., "Let's sit here and watch a TV show."). In the second group, the pairs of students watched the same *Adam-12* episode with the same preschool teacher who made general explanatory comments (e.g., "Oh, no! That boy is in trouble. He did not go to school when he was supposed to. He was playing hookey and that is bad."). The children who watched the program with the preschool teacher who talked about the program content showed a highly significant increase in their knowledge of specific details of the program, an increase in their knowledge of truancy, a decrease in the erroneous knowledge of truancy, and an increase in positive attitudes. These increases and decreases were still evident on a 1-week post-test. These and other results are evidence that a parent or another significant adult can greatly influence what a student learns from television programs in terms of the amount of information, accuracy of information, and the direction of the student's attitudes.

A similar study by Corder-Bolz and Primeaux (1978) indicated that significant adults could modify the effects of televised violence by talking about the program to a student while he or she viewed the program. In other studies, it was found that parental and adult discussion of a program with students and children could significantly increase the positive benefits and decrease the negative effects of watching a variety of television programs such as *Bareta* and *All in the Family* (Corder-Bolz, 1980*a*).

The positive effects of intervention while students are watching television programs have also been found in the classroom. Studies by Corder-Bolz (1978) and Primeaux and Corder-Bolz (1978) found that teachers could significantly increase the instructional effects of education programs such as *The Electric Company* by helping the students understand the program. By explaining parts of the programs the students were not understanding and by asking questions to focus their attention, teachers are able to "customize" a television program to meet the specific needs of the particular students viewing the program.

Recently, research has shown that television itself can be used to assist and encourage students to view television more carefully and critically. The parental and teacher-mediation studies have indicated that, by asking questions, making explanatory comments, and directing students' attention to various aspects of a television program, students can be assisted in being more critical viewers. Similarly, Corder-Bolz (1980*a*) found that "inserts" in television programs could assist and encourage students to be critical viewers. Sixty-second "inserts in a *Batman* program explained that the program *Batman* is fun to watch but the character Batman is not real and that in real life it is not legal to hit and hurt people. Students, after viewing the program, were less likely to endorse aggressive and violent behaviors to resolve conflicts. In contrast, students who viewed the same *Batman* episode without the inserts were more likely to endorse aggressive and violent behaviors to resolve conflicts.

Lemon (1976) presented several parenting approaches to teaching critical viewing skills. One major approach is discussion of the many issues related to television content and television viewing. The complex concept of reality as it applies to television content should be discussed with students. The different patterns of stereotyping should be discussed with students. Lemon indicates that "Parent/child co-viewing and mutual discussion is important . . . because parents are themselves a primary outside source of information" (p. 3). Exposure to magazines and newspapers and practice in discussing information from them can further help a student determine the extent of the realism of television programs. Lemon also suggests that parents and children need to learn "more about how and why television programs are produced and broadcast and then discuss what this suggests about the reality of program content" (p. 3).

O'Bryant and Corder-Bolz (1978) outlined six methods parents could use to help their children acquire and use critical viewing skills.

> *Limited Viewing.* Parents can help their children become aware of the role and place of television in their lives by limiting the amount of time they view TV. While television viewing is a legitimate activity, there are also a variety of other activities for all members of the family.
>
> *Content Control.* Many parental values can be communicated by limiting the kinds of programs children are permitted to view. In some cases, parents may wish to encourage their children to watch a program; in other cases, parents may wish to discourage or not allow the viewing of a program.
>
> *Purposeful Viewing.* Probably the most difficult viewing skill to learn is purposeful viewing. Because of easy access to TV programing and, in many cases, its constant presence in the home, many children find it "easier" to simply watch television, regardless of what is on, rather than engage in another activity. Since this viewing skill involves the reformulation of personal habits, it is often the slowest to be acquired.
>
> *Direct Mediation.* Parents can directly help children in the use of specific viewing skills. By providing explanatory or editorial comments, a parent causes a child to naturally perceive the programing in a larger context.
>
> *Indirect Mediation.* Parents can model critical viewing skills by discussing and evaluating the program with a spouse or older child in the presence of their children. This unintrusively teaches children not only how to critically view television but more important that television should be viewed critically.
>
> *Springboard Technique.* There are many applications and implications of television relevant to contemporary and personal situations. Television programing presents a wide range of human situations such as cheating, stealing, drug abuse, and premarital sex. A TV program can be used as a neutral setting for a parent to discuss a sensitive issue. As a consequence, the child or adolescent not only sees television as a source of information and cultural value, but also sees those ideas and values in a larger and more mature context.

Care needs to be exercised, however, in the development of a program to help students become more critical viewers of television. Many of the identified critical viewing skills are analogous to thinking and reasoning skills (e.g., Leifer 1976). Some schools in the late 1960s tried to accelerate the educational process by attempting to teach thinking skills directly. However, thinking skills have proven to be difficult to teach. Thinking and reasoning skills appear to develop as a result of a maturation process. This process occurs through a variety of experiences by which students over an extended period of time acquire abilities to perceive, reason, evaluate, and understand. Similarly, projects which have attempted to teach the more complex critical television viewing skills have had limited success. For example, a study funded by the Office of Child Development found unexpected difficulties in teaching critical viewing skills (Leifer et al. 1976). Critical viewing skills appear to be a combination of reasoning skills and television viewing habits. Therefore, the acquisition and regular use of critical viewing skills can be expected to require several months, maybe several years, of "training." The most fruitful approach appears to be the involvement of parents and teachers. Parents and teachers, with appropriate materials and training, can assist and encourage students to acquire and use critical viewing skills. Because the parents' and teachers' involvement could occur over many months, the likelihood of success is substantially increased.

Therefore, one of the important issues is whether or not parents do attempt to explain and discuss television programing with their children. Several researchers (e.g., Corder-Bolz 1980*b*; Mohr 1978) have found that parents generally do not talk to their children about television programing. According to self-report data, less than half and probably less than a third of American families comment on television content during or immediately following the viewing of a television program. Recent observational studies by Corder-Bolz and Marshall (1980*a*) suggest that the self-report data may be high in estimates of parent verbal interaction with their children about television content. Furthermore, the available data suggest that parental commentary is mostly limited to program content with which parents agree or believe to be positive. This is disturbing because parental commentary is apparently most needed with television programing which is negative and which may cause children to acquire negative attitudes and behaviors. Television portrayals, for example, of violence, sexual behaviors, and drug use are often unrealistic and are misleading to children and adolescents.

Policy Implications

The state of the knowledge of television literacy and critical TV viewing skills is disappointingly limited. Only one major study has attempted empirically to identify the critical viewing skills. Very limited research has focused on how visual literacy skills are acquired and how they should be taught. Even in the absence of trustworthy empirical information, many organizations have attempted to develop materials that teach critical television viewing skills. Unfortunately, both researchers and practitioners appear to have ignored important literatures on critical thinking skills.

Recent research has provided important insights into the role of parents as a critical element in children's literate viewing of television and in children's learning of critical viewing skills. Unfortunately, many parents appear not to be involved in their children's viewing.

There are at least eight implications for future research, child development, and social policy.

1. Television literacy and critical television viewing skills are urgently needed. In a society and culture that is immersed in mass media, especially televised mass media, adults and children are surprisingly limited in the ability to be objective and critical of televised communication. The primary purpose of a liberal arts education has been, and continues to be, to liberate people from the constraints of their immediate environment—to enable people to perceive and appreciate other perspectives, other ways of thinking, and other styles of life. American television viewers have become entrapped by the video environment. This fact has profound implications for education and parenting, in particular, and for society in general. Children and adults need to be critical thinkers when using television.
2. There is a need to incorporate television literacy into the curricula of elementary, secondary, and postsecondary schools in a manner equivalent to the incorporation of print literacy. Students need to learn how to comprehend televised communication and how to use the vast resources provided through televised communication.
3. There is a need to incorporate television-related issues, problems, and ideas into parenting and childrearing programs. Currently, no major publicly or privately supported parenting program provides information on the various childrearing problems of family use of television, or approaches to coping with these television-related problems. Children and families spend the majority of their hours at home watching television. Television viewing is the major home activity. Children's use of television appears to significantly affect their personal and social development, their academic development, their social behaviors, their perception of social relationships, and their nutritional and safety attitudes and habits. Parents need to learn to make television a productive part of their children's lives. Children need to learn how to view television critically. Parents need to teach their children critical viewing skills. By mediating television, parents can provide their children with the necessary critical thinking defenses against distorted television portrayals.
4. Researchers and practitioners need to become familiar with the highly developed literatures on critical thinking. Concepts developed in these literatures would greatly facilitate the development of the field of television literacy and critical television viewing skills.
5. There is a need for empirical research to identify the critical viewing skills, how they function, and how they are acquired. In the absence of a valid data base, practitioners will continue to develop curriculum methods which may have little relationship to the nature and function of most critical viewing skills. The risk is that the field will fail to deliver the promised benefits and thus irreparably damage public acceptance of and concern for television literacy.
6. There is a need for research on how television literacy and critical television viewing skills can be taught at home. Research needs to be conducted on a wide variety of possibly fruitful parenting ideas. It also needs to be conducted on how parents can best be taught these parenting ideas and how this parenting information can be best disseminated.
7. There is a need for research on how educators can use television literacy in the classroom. Research needs to be conducted on the wide array of curricular and instructional ideas.
8. There is a need for research on how youth leaders can teach critical viewing skills to children and youth. Youth leaders are becoming aware that television has a profound influence on the lives of many of their members. There is, however, an alarming absence of ideas on how youth leaders can meet this contemporary need of youth. Research in cooperation with youth organizations should be conducted to determine how youth organizations can incorporate visual literacy into their youth programs.

Television literacy, including critical television viewing skills, is probably the single most important issue regarding television. The effects of television upon people's perceptions of reality, their social attitudes and behaviors, their social relations, and their health habits can be significant. Furthermore, regulation of television content and programing practices may ameliorate some of the identified and potential problems posed by television. However, with the pervasive presence of television and its continuing technological development, the only viable approach is to enable and encourage people, individually and societally, to be critical consumers of television. People need to analyze, compare, and evaluate programing to benefit from television more fully. Parents need to learn about various television-related childrearing alternatives. Teachers need to know how to use television as an educational resource. Youth leaders need to learn how to cope with the influence of television.

Television has been absorbed into virtually every aspect of our society and culture. While the influence of television is difficult to perceive, the impact of television is not necessarily neutral. The most important issue is the ability of people to be visually literate. By learning to use critical television viewing skills, children and adults can make television a positive, beneficial part of their lives.

As Edward R. Morrow, literate of spoken, written, and broadcast word, commented:

Television can teach. It can illuminate. Yes, it can even inspire. But it can do so only to the extent that humans are determined to use it to those ends. Otherwise it is merely light and wires in a box.

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VIOLENCE AND AGGRESSION

Introductory Comments

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"Violence and aggression"—that phrase characterizes the continuing public concern about commercial television programing from its very inception in the early 1950s. Public concern was, in turn, the stimulus for much of the early research on television and its effects on the viewer, culminating in the major report of the Surgeon General's program in 1972. During the past decade, as this volume documents, research interests and activities have gone far beyond the issue of violence and aggression. At the same time, research has continued to explore the complex relationship between violence on television and later aggressive behavior by the viewer.

The three reviews in this section provide a good composite picture of where this research now stands. In his overview chapter, Comstock describes the sequence of public and scientific responses to the Surgeon General's report. The major substantive legacy of that report and the research sponsored by the Surgeon General's program is the conclusion that a causal connection exists between violence shown on television and subsequent aggressive behavior by children. As Comstock notes, the Surgeon General's scientific committee reached a unanimous conclusion in 1972. Early press coverage on the report was misleading and stimulated controversy over the meaning of that conclusion.

But the controversy over that conclusion continues even today, despite the fact that most researchers in the field accept that causal relationship. It is the lay public and the television industry which are less persuaded. Indeed, the controversy will probably increase in the light of the new findings and conclusions of the study by Milavsky and his colleagues, summarized in this section. I will return to that point later.

An examination of the conceptual issues and their various resolutions is in order. Causal inferences in the social sciences are, at best, approximations. Over the past 10 years, the concept of causality in the social sciences has itself been the subject of much analysis. As with other complex concepts in science, there is no single, unassailable theory or approach. Indeed, errors in inference can be made in either direction; a likely causal relationship may be dismissed by too rigorous a standard of judgment, and, conversely, a questionable causal relationship may be upheld by too weak a standard.

Much of the present disagreement about the meaning of the research findings on violence and aggression derives from such differences in standards of judgment. Most television researchers look at the totality of evidence and conclude, as did the Surgeon General's advisory committee, that the *convergence* of most of the findings about televised violence and later aggressive behavior by the viewer supports the positive conclusion of a causal relationship. A few researchers, looking at each piece of research individually and finding flaws in design and/or methodology, conclude that the case has not been made for the causal relationship.

Two papers in this section, one by Huesmann and the other by Milavsky and his colleagues, illustrate how differences in conclusions can be reached, especially when the data are themselves complex, and the field experiments under which they were collected inevitably permit less control of all relevant variables than is possible in a laboratory situation.

Huesmann marshalls his evidence in accord with the convergence approach. He examines a large number of studies and concludes that the "causal relationship" first found by the Surgeon General's committee is confirmed by the bulk of the evidence produced in the past 10 years. Huesmann goes on to analyze these studies in accord with various information-processing models of learning. He finds that observational learning and attitude change induced by the televised violence contribute to the positive relationship with later aggressive behavior. And, in support of another conclusion by the Surgeon General's committee, Huesmann finds no evidence to sustain the catharsis theory that viewing televised violence may actually decrease later aggressive behavior.

Milavsky and his colleagues report on a major new field study. Unlike a previous field experiment by Milgram and Shotland (1973), which attempted to manipulate subjects in a quasi-laboratory experiment, Milavsky et al. completed an extensive followup panel study with samples of elementary school and teenage respondents. The study, underway since 1970, has benefited in both its design and methodology from the experience of studies done under the Surgeon General's program as well as subsequent research.

In many ways this is a unique study and the full report, to be published elsewhere, will be carefully scrutinized because of its rich data and important implications. The conclusion that this study "did not find evidence that television violence was causally implicated in the development of aggressive behavior patterns among children and adolescents over the time periods studied" is likely to provide a new argument about the relationship between televised violence and viewer aggression.

A fundamental aspect of the argument turns to how the issue of causal inference is approached and what method of analysis is used to test the inference. Milavsky and his colleagues chose to establish causality in accord with a statistical model whose complexity and relative newness will permit honest differences of opinion about its appropriateness for this extensive set of data. It is not difficult to predict that this study with its wealth of data will provoke much discussion pro and con. That discussion will undoubtedly include a recent major field study by Belson (1978), in which another statistical model was used and whose conclusions affirmed a causal relationship between viewing televised violence and later aggressive behavior in adolescent boys.

It should be noted, of course, that negative findings do not ordinarily carry the same weight in the balance of evidence as do positive results. Thus, the Milavsky study is more important because of its magnitude and careful design than its results. Its basic conclusion is a negative finding which the authors themselves correctly confine to the time and circumstances of that particular study. They recognize that the null hypothesis cannot be proved. In contrast is a large body of cumulative evidence which points to a relationship between televised violence and aggressive behavior. Nevertheless, the Milavsky study will probably renew the old argument about the meaning of that relationship.

It would be inappropriate in an introductory commentary such as this to enter into such argument. It is important, however, to the further understanding of the implications of this study and others of similar scope that they be subjected to rigorous examination and reexamination, regardless of whether the original conclusion supports or does not support a causal inference. That debate, it is to be hoped, will further illuminate the significance of the findings.

It is of relevance that other recent naturalistic field studies have expanded the evidence on the linkage between television violence and aggressive behavior and have also demonstrated a wider age range in the samples studied. The original Lefkowitz et al. report (1977) involved 9- and 10-year-old boys. Data from two separate cohorts of preschoolers (Singer and Singer 1980*a*,*b*; 1981) also yielded indications that heavy viewing and especially viewing of action-adventure and violent cartoon content may predict later aggressive behavior even when IQ, social class, and ethnic status factors are controlled. The field studies by Leyens et al. (1975), McCarthy et al. (1975), Singer and Singer (1980*a*) among others address the elementary school-age children as do the recent new researches by Eron and Huesmann and their collaborators in various European cities. The Belson and the Milavsky studies deal with teenage samples. Thus, except for the Milavsky report, evidence for associations between television watching and some measures of aggressive behavior can now be identified across the age spectrum from 4 years of age through about age 15.

A second new development highlighted by recent research has been the indication that girls as well as boys reflect the correlation between television viewing and overt aggressive behavior. The new studies by Eron and Huesmann (cited in Huesmann) in the United States and in Europe, as well as the work with preschoolers reported by Singer and Singer (1980*a*,*b*; 1981), do not show the sex differences found in the earlier Lefkowitz and Eron studies. Is it possible that, among other social changes, the increased availability on television of aggressive female models such as Bionic Woman, Wonder Woman, and Charlie's Angels may be having an impact? Recent reviews of available research (Eron and Huesmann 1980; Singer and Singer 1981) address this issue more extensively.

Most of the field studies still rely heavily upon peer ratings of aggression or direct observations of children's behavior in school settings. More studies of family living patterns, of home television viewing styles, family attitudes toward violence, and evidence of aggression by children at home are needed. Studies with small preschool samples of heavy and light viewers and consistently aggressive or nonaggressive children from middle and lower SES backgrounds suggest consistencies from school to home. Parent interviews also seem to rule out the possibility that heavy television viewing and aggressive children come from homes already characterized by violence (Singer and Singer 1980*b*; 1981).

The fourth paper in this section by Signorielli, Gross, and Morgan deals with another controversial and complex aspect of the issue of violence on television. A key element in the evaluation of the relationship between violence and aggression is an objective and reliable measure of violence on television. The best known and most extensively used measure is the violence profile initiated by Gerbner in 1967 and continued ever since on an annual basis by Gerbner and his colleagues, among whom are the authors of this paper. Signorielli, Gross, and Morgan review the major issues in developing an adequate measure of violence, including the attributes of the definition and the way the incidents of violence are coded and indexed. As they clearly point out, differences in definition, coding, and/or indexing can produce significant differences in measured levels of violence. Regardless of the various criticisms of the violence profile developed by Gerbner and his colleagues—much of that criticism coming from the television industry itself—the annual findings over the past 13 years provide a longitudinal picture of violence on television that deserves attention. By that measurement, violence in 1980 has not significantly diminished from the levels found before the Surgeon General's report was published in 1972.

An important outgrowth of the violence profile developed by Gerbner and his colleagues is a theoretical formulation they call "cultivation analysis." The central thesis is that the more time a viewer spends watching television, the more likely that viewer is to see the world as it is portrayed on television. To the extent that the television world differs from the real world—and it inevitably does in its dramatic emphases and stereotyping—those differences are revealed in the conceptions of social reality held by heavy viewers.

Over the past decade, Gerbner and his colleagues have accumulated considerable evidence that heavy viewers are more likely than light viewers to hold perspectives and outlooks which match what they see on television. This holds for aspects of televised violence, where the heavy viewer sees the world as a mean and scary place. It also holds for images of older people, stereotypes about sex roles, conceptions of family life, ideas about occupations, and attitudes about sex.

Where does all this leave the field of research on television and violence? On the original question, the consensus still seems to uphold the original conclusion of a causal relationship found by the Surgeon General's committee. At the same time, methods of analysis and interpretation of the results have achieved new levels of sophistication. For example, cross-lagged correlation was a relatively new procedure when it was employed by Huesmann and his colleagues in their longitudinal study, published in the report to Surgeon General in 1972. That study, because of the significance given to the cross-lagged correlations, was a major factor in the conclusion reached by the Surgeon General's committee. By 1980, cross-lagged correlation was no longer a novel procedure, having been joined by other statistical models for establishing causal inferences, including those employed by Milavsky and his colleagues and by Belson. All of these models have their proponents and critics.

It is ironic, but not unexpected, that with this increasing sophistication of analysis no unequivocal conclusion has been reached about the relationship between violence and aggression. While the case for the relationship has certainly been strengthened in the past 10 years, the full authenticity of cause and effect—let alone its power—is still subject to honest disagreement.

At the same time, the ramifications of this conclusion are not fundamentally inimical to the well-being of the television industry. The research has gone beyond the simple question of violence and aggression. What is incontrovertible is that, in some ways, television influences the attitudes and behaviors of some of the viewers. How much influence and in what ways and under what circumstances are what much of the current research addresses. Whatever the continuing research reveals, the impact on the television industry should be for positive change. If that implication is understood and accepted by all parties, a stronger collaboration will have been established between research and industry practice. At that point, all of us will have been benefited: the industry, the researchers, and especially the viewing public.

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Violence in Television Content: An Overview

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In 1969, Robert K. Baker and Sandra J. Ball (Baker and Ball, 1969*a*) published their staff report to the National Commission on the Causes and Prevention of Violence, *Violence and the Media.* Three years later, the Surgeon General's Scientific Advisory Committee on Television and Social Behavior issued its conclusions, *Television and Growing Up: The Impact of Televised Violence.* These two volumes became the focus of controversy over the effect of violent television entertainment on aggressive and antisocial behavior. They also initiated the annual "violence profiles" of George Gerbner and colleagues, which have become the focus of controversy over the measurement of television violence.

The growing support for the hypothesis that exposure to violent portrayals increases the likelihood of aggressive or antisocial behavior on the part of a viewer (Andison 1977; Bandura 1973; Belson 1978; Berkowitz 1962; Bogart 1972; Comstock et al. 1978; Eysenck and Nias 1978; Geen 1976, 1978; Goranson 1970; Hearold 1979; Surgeon General's Scientific Advisory Committee 1972) has led to a keen interest in the trends and patterns of violent content in television entertainment. What has transpired divides into four periods: growing attention (1952–1967); intensive scrutiny (1968–1971); controversy and apathy (1972–1974); and, finally, intensified confrontation (1975–present).

Growing Attention (1952-1967)

The first congressional hearing devoted to television programing was held by the House Committee on Interstate and Foreign Commerce in 1952, when the 10.3 million households with television sets constituted less than a quarter of all American households. The issues were the quantity of violence and sexual provocativeness, and their harmfulness (U.S. Congress 1952). In the next 12 years, there were repeated hearings, more narrowly focused on violence, before the Senate Committee on the Judiciary in 1954 and 1955 (by Estes Kefauver; U.S. Congress 1955*a*, 1955*b*) and in 1961, 1962, and 1964 (by Thomas Dodd; U.S. Congress 1963, 1965).

The Congressmen on the whole were critical, the broadcasters defensive. The Congressmen suggested that violence might encourage delinquency and otherwise might be damaging to young viewers, and they expressed skepticism that broadcasters were doing enough to reduce it. The broadcasters offered assurances that violence would be held in check, promised to cooperate in the initiating of research on the topic, and denied that there was any justification for concern. The steps open to dissatisfied congressional committees were unclear, given the free speech guaranty of the First Amendment and the prohibition on interference in programing imposed on the Federal Communications Commission by the Communications Act of 1934.

Empirical analyses documented that there was a great deal of violence on television, that it increased over these years as the networks increasingly turned to action and adventure programs, and that there was not only a great deal of violence during the afternoon and evening hours when large numbers of children viewed but that programing designed for children on the average was more violent than that intended for general audiences (Greenberg 1969; Head 1954; Larsen et al. 1963; Remmers 1954; Smythe 1954). The measurement of television violence gained credence as one indicator of the conformity of the medium to the stipulation of the Communications Act of 1934 that broadcasters act in "the public interest, convenience, and necessity."

Intensive Scrutiny (1968-1971)

The staff report by Baker and Ball (1969*a*) to the National Commission on the Causes and Prevention of Violence made it clear that the data from laboratory-type experiments supported the view that the viewing of violence increased the likelihood that a viewer would subsequently behave more aggressively. The report to the Surgeon General (1972) by his Scientific Advisory Committee on Television and Social Behavior (Comstock and Rubinstein 1972*a*, 1972*b*; Comstock et al. 1972; Murray et al. 1972; Rubinstein et al. 1972) reached the conclusion that the "convergence" of evidence from the laboratory-type experiments and from newly completed surveys reflecting everyday behavior supported the hypothesis that violence viewing contributes to aggressiveness.

The commission staff report departed from its reliance on available studies by commissioning Gerbner to analyze violence in television entertainment (Baker and Ball 1969*b*). The research commissioned for the Surgeon General added 2 additional years to this analysis (Gerbner 1972*a*), as well as other studies of violence in the media. The new research focused on three topics: (1) the amount and character of violence on television; (2) the circumstances and milieu in which violent programing is created; and (3) the factors responsible for the continual presence of violence in television entertainment.

Gerbner (1972*a*), as he and his colleagues would do during the ensuing years, analyzed a typical fall week of prime time and weekend morning dramatic programs, representing three seasons, 1967, 1968, and 1969. Several concepts were introduced: a "violence index" summarizing the quantity of violence in a given body of programing; tabulations of the rates of murder and acts of violence by program categories; classifications of violence by setting and characteristics of perpetrators; and the calculation of the ratio of violence perpetrated/violence suffered by characters of a particular age, sex, or ethnicity to produce a "victimization ratio" that ostensibly reflects the degree to which characters of a given sort are portrayed as powerful or powerless—with the greater frequency of victims compared to perpetrators said to measure the portrayal of social impotence.

Much that Gerbner reported would remain about the same a decade later. The frequency of violent acts did not change much except for a decline in fatalities and injuries; cartoons and weekend daytime programing, which includes all children's programs, were more violent than prime time general audience programing; there were detectable differences in quantity of violence among the networks; involvement in violence was common, with two-thirds of 762 leading characters so classified; retribution was common, with over 40 percent of leading characters victims injured or killed as a consequence of their earlier violence; victimization was frequent and more common than the committing of violence, with half again as many leading characters victims than were perpetrators; and violence was typically the prerogative of a particular kind of male free of responsibilities, for three-fourths of all leading characters were "male, American, middle and upper class, unmarried, and in the prime of life," and most male roles involved violence. There were numerous departures from real life: The likelihood of involvement in violence was far greater; only half the leading characters were gainfully employed; the middle and professional classes were grossly overrepresented compared to census statistics; and most of the violence occurred between strangers or slight acquaintances.

Clark and Blankenburg (1972) analyzed longer term trends in television violence by classifying the synopses in *TV Guide* for 8-11 p.m. programing for one October week between 1953 and 1969, defining a violent program as one whose synopsis contained "physical acts or the threat of physical acts by humans designed to inflict injury to persons or damage to property." Over the 17 years, the annual proportion of violent programs ranged from 17 to 41 percent. There was no apparent upward or downward trend, but there were peaks about every 4 years. The frequency of violent programs was correlated with the average ratings for such programs in the previous year. Violence thus appeared to increase whenever the television business perceived that it might be profitable and to recede as the increase in violent programing diluted the portion of the audience seeking violent entertainment, imitators of successful violent programs proved inept, and public criticism of violent programs rose. Violent programs on the average achieved only marginally higher ratings than those nonviolent, but the frequency of violent programs in a season was correlated with average total evening ratings—suggesting that violence does succeed in drawing an audience.

When Clark and Blankenburg (1972) analyzed theater films released between 1930 and 1969, they found, despite sharp oscillations, a progressive increase in the proportion of violent films. The trend preceded the advent of television as home entertainment, so, although competition between the movies and television probably contributed to more violence in both media, with movies becoming less viable as family entertainment, other factors were also at work. The consequence, however, was that the films on which television could draw were, with

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time, becoming more violent, and thus so too was television.

Greenberg and Gordon (1972) confirmed that there was a normative social conception of television violence. They found that the ranking of 65 network series, based on the degree of violence attributed to each, was unchanged whether or not respondents were asked to rate them as to "violence" otherwise undefined, or by the definition, "By violence, I mean how much fighting, shooting, yelling, or killing there usually is in the show," although the use of the definition somewhat augmented the rating given each series. Further evidence of social accord came from the agreement in rankings derived from 43 newspaper and magazine television critics and from the sample of ordinary adult viewers.

Cantor (1972) interviewed 24 men and women writers and producers representing all children's programing in production. Baldwin and Lewis (1972) interviewed 48 producers, writers, directors, and other persons associated with all the western, police, detective, and spy series then being broadcast. Craft dictated the content of children's programs; the goal was to hold attention, which meant tested formulas of stereotypes, fast action, and violence. The makers of general audience programing were skeptical of the notion that violence could have any undesirable impact on psychologically normal viewers and welcomed violence as meeting the specifications for the product—conflict visually portrayable, conventions understood by all, attention-drawing action, and repeated crescendos of suspense amenable to punctuation by commercials.

Baker (1969) compared subsequent events with the statements of broadcasting spokesmen before the various congressional bodies. Promised reductions in violence had been followed by measurable increases. Promised investigations of the possible influence of violence had not been undertaken. One study, underway, was described to a Senate committee as focusing on violence, young persons, and antisocial behavior; when published, it dealt with adult opinions about the medium (Steiner 1963).

The new evidence in support of the proposition that the viewing of violent portrayals increases the likelihood of a viewer behaving aggressively had enhanced the justification for monitoring violent programing. The impression left by the new studies of violent content, however, was that violent programing was intractable to other than minor reform. It not only fit the needs of the medium as craft but served it as business as well in helping to amass the largest possible audience.

Controversy and Apathy (1972–1974)

The reports of the violence commission staff and the Surgeon General's advisory committee were followed by contradictory reactions—scientific controversy and public apathy. The commission itself, drawing on the staff report, warned that:

> We believe it is reasonable to conclude that a constant diet of violent behavior on television has an adverse effect on human character and attitudes. Violence on television encourages violent forms of behavior and fosters moral and social values about violence in daily life which are unacceptable in a civilized society.
>
> We do not suggest that television is a principal cause of violence in society. We do suggest that it is a contributing factor (National Commission on the Causes and Prevention of Violence 1969).

Surgeon General Jesse Steinfeld accompanied the official release of his committee's report with unambiguous phrasing:

> . . . the study shows for the first time a causal connection between violence shown on television and subsequent behavior by children . . . (*New York Times*, January 18, 1972).

The commission staff report, however, was scholarly, detailed, and stylistically inaccessible, while television appeared minor among the other issues raised by the commission itself. The report of the Surgeon General's committee was cautiously phrased and, to many, ambiguous in conclusion, so much so that its initial coverage by the *New York Times* on January 11, 1972, carried the misleading headline, "TV Violence Held Unharmful to Youth." Subsequent coverage was similarly unsure, and often contradictory (Tankard and Showalter 1977), although eventually the national media—*Newsweek, U.S. News and World Report*, and the *New York Times*—did emphasize what the committee had actually said. Public interest and understanding nevertheless were blunted and delayed, and it was not surprising when Cater and Strickland (1975) ended their examination of the Surgeon General's inquiry 3 years later with the wisdom that all had been for naught: Public opinion, broadcasters, and programing remained unaffected.

Social and behavioral scientists, however, were engaged in sharp controversy. The manner in which the committee was appointed became a subject of debate when *Science* (Boffey and Walsh 1970) made public the fact that seven prominent persons, several of whom had conducted some of the best known and most respected laboratory-type experiments on the effects of violent portrayals, had been designated as unsuitable by the broadcasters and had not been appointed to the committee. The Surgeon General had sought recommendations for membership from a wide range of groups but had requested the designation of those "unsuitable" only from the three networks and the National Association of Broadcasters. The 12 members eventually included five closely associated with the broadcasting business. The cautious phrasing of the committee's report and the degree to which the empirical findings were overshadowed by the attention given to difficulties of interpretation and possible evidentiary flaws were blamed by many on the composition of the committee.

Unlike the public, however, the scientific community had a definite opinion. Paisley (1972) polled those who had authored the various studies financed under the Surgeon General's inquiry and found that three-fourths of those replying believed that the "more plausible" relationship between television violence and aggression was that violence viewing increased aggressiveness. Leifer et al. (1973) represented the majority in arguing that, within the limits of available methodology and resources, the research had provided as conclusive evidence as possible.

Debate also began to center on the usefulness, legitimacy, and pertinence of monitoring television violence and, particularly, the analyses offered by Gerbner and his colleagues (Blank 1977*a*, 1977*b*; Coffin and Tuchman 1972*a*, 1972*b*; Columbia Broadcasting System 1976; Eleey et al. Tedesco 1972*a*, 1972*b*; Gerbner 1972*b*; Gerbner and Gross 1976; Krattenmaker and Powe 1978; Owen 1972; Owen et al. 1974). The issues would pertain to any empirical measurement of television violence. They included:

- The definition of violence employed and its consequences for identifying violent content.
- The meaningfulness of the "violence index" constructed to give a shorthand measure of the level and fluctuation of violence.
- The usefulness of a gross measure of televison violence.
- The generalizability from the sampled content.

Gerbner and colleagues define violence as "overt expression of physical force against self or other compelling action against one's will on pain of being hurt or killed, or actually hurting or killing." Such a definition leads to the tabulating of violent occurrences regardless of style of treatment, context, human, animal or natural source, or the intentions of those involved.

It has been argued that, under such a definition, programs can wrongfully be identified as violent because comedy, accidents, and acts of nature are included. Comedy is not thought of by many as "violent," but one cannot reasonably reject the contention that violence should be measured wherever it occurs and not on the basis of genre. It has also been argued that the definition leads to an overperception of criminal acts or malevolent physically hurtful human conflict. This is certainly so if the measures are mistakenly interpreted to be confined to such behavior.

There is no reason for dissatisfaction over the discrepancy in the individual programs identified as being violent using the Gerbner data and ratings prepared by advocacy groups and others, for the latter generally confine themselves to the context of action and adventure programing. In fact, there were moderately high and significant correlations between the ranking of programs as violent by the Gerbner data and by the public and by television critics (Greenberg and Gordon 1972). These correlations probably underestimate correspondence over the concept of violence because of the inevitable imprecision when the Gerbner data, which reflect only one episode of any series—contrary to the intent of the investigator, which is to reflect violence in the season's schedule—are used to evaluate individual series. When programs were identified as violent by Gerbner and by the coding of synopses from *TV Guide*, there was almost 90 percent agreement, with most of the disagreement occurring over comedy programs (Clark and Blankenburg 1972). The conclusion is not that the Gerbner data are incorrect but that the use of a normative definition of violence requires some qualification in interpretation and that programs identified as violent by its use conform more perfectly to the normative perception when comedy or other formats, which some consider inconsistent with "violence," are excluded.

The Gerbner "violence index" (table 1) has aroused the ire of many. It is said to be an arbitrary combination of factors. There is no necessary reason for the inclusion of any component, the formula for combining them, or the weights involved. Shifts in the index are not readily interpretable, unless the index is accepted as synonymous with violence. Even if the definition, the time sample, and the rules of program inclusion and exclusion are accepted, any disagreement over the kind of violence that should be emphasized would render the index an imperfect indicator, and the statistical fact that the components

Table 1

Computation of Gerbner "Violence Index"*

$$\text{Violence index} = \%P + 2\,(R/P) + 2\,(R/H) + \%V + \%K$$

where

$\%P$ = percentage of programs studied (i.e., network evening plus children's, nonstoryline excluded) in which there is violence
R/P = number of violent episodes *per program*
R/H = number of violent episodes *per hour*
$\%V$ = percentage of *leading characters* involved in violence—either commit act or as victim
$\%K$ = percentage of leading characters involved in killing—either as killer or victim

*Adapted from Comstock, G., Chaffee, S., Katzman, N., McCombs, M., and Roberts, D. *Television and Human Behavior.* New York: Columbia University Press, 1978.

of the index are homogeneous in behavior and that it achieves statistical criteria as an index (Signorielli, Gross and Morgan, this volume) does not make it meaningful. Gerbner has argued that indices by definition are arbitrary combinations, that the questions raised are applicable to any index, and that this index serves as a heuristic device leading to the analysis of the shifts in components behind any trend, change, or difference. Of course, but it must be emphasized that this index requires acceptance before the figures generated can be taken as representative of television violence.

The usefulness of a gross measure of television violence has been questioned on several grounds. One can share the fear of those critics who warn that any measure will encourage public and governmental attacks on the medium by many who imperfectly understand the measure, but this is not an argument against measurement. The examination of the fictional content of the medium that is modern society's most popular purveyor of stories and the most pervasive of all mass media is justifiable on scientific grounds alone. Those who argue that any use of a measure of violence must be predicated on compelling evidence that the kind of violence under observation has been demonstrated to be harmful ask too much. Concern over violence is sufficient justification for empirical measurement.

It must be acknowledged, however, that the Gerbner data do not give any weight to the various aspects of violent television portrayals that have been demonstrated in laboratory-type experiments to enhance or mitigate the likelihood of subsequent aggressiveness or antisocial behavior on the part of a viewer, and historically such hypothesized influence has figured prominently in the concern over television violence. These aspects include:

(a) reward or lack of punishment in the portrayal for the perpetrator (Bandura 1965; Bandura et al. 1963; Rosekrans and Hartup 1967);
(b) presentation of the portrayed violence as justified (Berkowitz and Rawlings 1963; Meyer 1972);
(c) cues in the violent portrayal which match cues in the real-life environment (Berkowitz and Geen 1966);
(d) depiction of the perpetrator as similar to the viewer (Rosekrans 1967);
(e) depiction of the violent interaction as motivated by the malevolent intent to injure (Berkowitz and Alioto 1973; Geen and Stonner 1972);
(f) depiction of the portrayal of violent interaction as real rather than fictional (Feshbach 1972);
(g) presentation of highly exciting material of any kind (Tannenbaum and Zillmann 1975; Zillmann 1971); and
(h) when the actions of the perpetrators of violence in a portrayal are not criticized (Lefcourt et al. 1966).

It is doubtful that any measure could encompass such contextual aspects adequately enough to satisfy those accustomed to thinking of the subtleties that distinguish one drama from another, and the criticism that some crucial element is overlooked will always remain with content analysis.

Nevertheless, the Gerbner data, because they ignore these findings that advance general principles regarding the influence of television portrayals on the behavior of young persons, can be said with justification to be inadequate as an index of the kind of violence likely to contribute to viewer aggressiveness or antisocial behavior. These findings suggest that portrayals may influence behavior through the acquisition of new responses or through altering the likelihood of the performance of newly or previously acquired responses. Such alteration may occur through the changing of expectations regarding the outcome of behavior, through identification with the perpetrator of an act, by raising or lowering inhibitions, by changing the elicitory potential of environmental cues, and by assigning certain meanings to a class of behavior. Thus there are two kinds of instructional processes at work: (1) those which directly teach specific ways of behaving, and (2) those which revise, however temporarily, the internalized contingencies which govern the display of behavior. As various observers have emphasized (Bandura 1973, 1978; Comstock et al. 1978), the fate of both kinds of instruction, as far as long-term influence goes, will be determined by the success or failure of the behavior in the marketplace of human interaction. If the behavior is reinforced by proving efficacious for the individual, it will find a new prominence in his or her way of life. The failure of the

Gerbner data to incorporate such a theoretical position—as a complement to and not a substitute for what the data do reflect—renders them less useful than they would otherwise be and exemplifies the hermetic resistance, common but regrettable, of one line of scientific inquiry to advances in another.

The reply of Gerbner is that it should not be assumed that aggressive or antisocial behavior is either the principal or sole outcome of television violence, that television violence should be measured without preconceptions wherever it occurs, and that such measurement may lead, as he believes it has in his own investigations, to the discovery of other kinds of influence. Behind this view is a theory of the social function of the fiction of television. It is said to be a national mythology in which the function of violence is to express the value norms of society regarding power and influence. Violence is said to portray who has power and who does not by depicting who acts and who is acted upon. The committing of violence is said to represent power, victimization to represent subordination. The fact that television entertainment is fiction is central to this perspective, as is its popularity, for it treats such fiction as the idealized representation of reinforcing accepted ideology. He concludes that television violence helps to maintain the existing social order by reinforcing beliefs about who is powerful or dangerous and increasing belief in the likelihood of risk and danger. Thus, television is said to "cultivate" beliefs and perceptions.

Gerbner advances a "victimization ratio" for various demographic groups that is said to represent the relative degree to which each is portrayed as being at risk. These ratios of perpetrators to victims omit those within a demographic category not involved in violence. Groups that consistently have been high in "victimization" have been women, the poor, and the elderly. These ratios are said to reflect the conventions of television drama, but it would be wrong to assume that the implied message is communicated to the audience or to mistake them as other than an arbitrary, if possibly insightful, statistical measure of dramatic content. Other measures, such as the actual number or percentage of persons who are victims in a given category, would generally reverse the pattern toward greater victimization for these groups because of the predominance of white males in action drama. It is conceivable that it is valid to focus solely on the pattern of dominance among those involved in violence, and such an approach derives plausibility from the consistency of the results with the actual social hierarchy; but, since it was developed with the knowledge of this hierarchy, this is hardly verification. What is absent but necessary is some empirical demonstration that this measure is more valid or pertinent than others. Nevertheless, it is equally unjustifiable simply to discard this approach as it is to accept it on face value, for the "victimization ratio" might represent insight into the character of television drama and the means by which it affects its audience.

The Gerbner 1-week sample has been criticized for its timespan and for what it excludes. Analysis of added weeks of programing, however, has not produced notably different results, although the possibility of variation within seasons, particularly with the increasing degree to which the networks discard and add programs in competing for viewers, makes anything other than very marked differences or shifts among networks interpretively problematic, especially for the violence index because of its arbitrary character. The sample thus appears to be adequate to reflect each fall season's network programing of fiction for general and child audiences within the limits imposed by the measure employed. It certainly does not reflect television as a whole; it excludes independent stations and non-network programing. Nor does it reflect network television as a whole; it excludes news, sports, nondramatic specials, and variety programs. In some respects, these omissions may give a falsely high, and in others a falsely low, impression of the quantity of violence on television.

The National Institute of Mental Health commissioned the Social Science Research Council to examine the question of violence measurement. The 1975 report of the committee assembled for this purpose concluded that there was sufficient evidence of the influence of television violence to warrant monitoring and that the normative, context-free approach of Gerbner was the most feasible and justifiable, although it argued against the aggregation of measures into a summary index and for the elaboration of coding to include such factors as motive and goal and the expansion of the sample to include independent stations and non-network programing by affiliates. In sum, the Gerbner "violence profile" must be understood in terms of its composition and limitations. With this qualification, it should be judged a valuable source of knowledge about television's fiction and its violent content.

Confrontation (1975-Present)

Had Cater and Strickland (1975) entertained a broader concept of impact, they would not have concluded that the Surgeon General's inquiry left no mark. By infusing the literature with a large number of new studies, by introducing such new topics as the influence of television advertising on children, by cultivating the interest of young researchers just beginning their careers, and by giving credence to the notion that the media have demonstrable effects, the Surgeon General's inquiry contributed to what one well-informed observer (Katz 1977) called a "renaissance" in communications research.

By 1975, the verdict of the Surgeon General's Advisory Committee and the evidence on which it was based had become much more widely known. Advocacy replaced apathy. Congress demanded that the FCC reduce violence and sexual provocativeness on television, and Richard Wiley, then FCC chairman, responded with "family viewing," whose adoption by the three networks and the National Association of Broadcasters he achieved through ex officio urging. "Family viewing" extracted a promise of 2 hours each evening of television suitable for children. Court decisions quickly erased it as counter to the First Amendment, a violation of FCC procedures, and an infringement on the access of program suppliers to the market (*Broadcasting* 1979; U.S. District Court 1976). But the content of broadcast entertainment remained on the public agenda.

It was not long before the American Medical Association had adopted a resolution calling on the broadcasters to reduce television violence as an unnecessary hazard to social health, and the National Parent-Teacher Association had embarked on a campaign that would include public forums in major cities and a monitoring of television content. Meanwhile, a journal published data correlating quantity of violence with the names of companies responsible for the accompanying commercials (Slaby et al. 1976), and the National Citizens Committee for Broadcasting gave wide dissemination to such information. In turn, some advertisers began to attempt to reduce their association with violent programing.

Congress again turned its attention to television violence with hearings in Denver, Los Angeles, and Washington by the communications subcommittee of the House Committee on Interstate and Foreign Commerce and a disputed report on the performance and responsibilities of broadcasters (U.S. Congress 1976, 1977). As Albert (1978) chronicles, the broadcasters won a narrow victory in September of 1977, with a majority report by an eight-to-seven vote that held:

1. "Although it may be impossible . . . to 'prove' a precise cause and effect relationship between televised violence and aggressive behavior, excessive viewing of violence may have harmful effects."
2. "Responsibility for the present level of violence . . . rests largely with the television networks . . . and, to a lesser degree, with broadcast licensees, program producers, advertisers, and the viewing public."
3. "Parental supervision is probably the most effective way to curb the negative effects of excessive viewing of televised violence by children."
4. "Industry self-regulation is a potentially effective way to limit the level of televised violence. . . ."
5. "There are avenues through which the subcommittee, the Federal Communications Commission, and the public can address the problem of televised violence consistent with the First Amendment . . . ," such as public education on the issue, production of more nonviolent children's programs, encouragement of new technologies to increase the diversity of programing available, and the development of mechanisms so that viewer protests might be more effective.

The report, in effect, expressed some dissatisfaction with the status quo but held the broadcasters neither responsible nor the proper target for redress. The minority of seven thought differently, arguing in their report that (1) social and behavioral science evidence strongly supported the view that reducing violence in television programing would be in the public interest; (2) programing content was dictated by the decisions of broadcasters in competition for a mass audience, the market analogy of supply-and-demand did not hold, and many viewers favored a reduction in violence; (3) it was unrealistic and insensitive to place the responsibility on parents, because working parents could not constantly supervise their children's viewing; (4) self-regulation could not deal effectively with television violence; and (5) there were many options open to the FCC to take strong and decisive action to remedy an impact of programing content that was not in the public interest.

The mass media are seldom very high in the hierarchy of public anxieties, and the public holds opinions that, in effect, are self-cancelling (Comstock 1980; Comstock et al. 1978). For example, about two-thirds will assert there are too many commercials, but two-thirds also will agree that commercials are a "fair" price for fee-less entertainment. Although the public on the whole evaluates television quite favorably, public satisfaction has declined over the past three decades. Nevertheless, violence and sexual provocativeness, always preeminent among public complaints about television, appear to be of increasing concern, with a 1980 survey finding that 70 percent believed there was too much violence and 64 percent believed that there was too much sex, and similar proportions thought each was a "serious" or "very serious" problem (Immerwahr et al. 1980). Thus, while there is insufficient dissatisfaction for any broad reform of television, "violence and sex" do strike a responsive and sour chord among a sizable proportion of the audience.

One legacy of the period of intensive scrutiny was that all three networks became involved in research on the social influence of the medium. Each responded somewhat differently to new pressures. CBS undertook its own monitoring of television violence, using methods it claimed were more pertinent to the concerns that had been expressed than those of Gerbner (Columbia Broadcasting System 1977). ABC asserted that it would apply a set of rules that would excise possibly harmful violence by taking into account the dramatic context in which it occurred (A. R. Schneider 1977). NBC considered but rejected as redundant its own empirical measure of violence. All three asserted that dramatic context was a paramount question—which they believed Gerbner ignored—and the argument over what was scientific and valid in violence measurement continued (Columbia Broadcasting System 1977; Cultural Indicators Research Team 1977; Gerbner and Gross 1977; Gerbner et al. 1977*b*, 1977*c*; J. A. Schneider 1977).

Recent Trends in Violent Content

There are three sources of data on recent trends in violent television programing—the violence profiles by Gerbner and colleagues (Gerbner et al. 1979*a*), the analyses by Greenberg and colleagues (Greenberg et al. 1979), and measures released by the Columbia Broadcasting System (1980). As shown in tables 2 through 5, the selection of the most inclusive and arguably representative measure from each of these investigations—a selection whose legitimacy readers must judge for themselves—lead to indices differing in character, and these differing indices, when arranged in a time series, lead to different impressions about the quantity and trend of television violence. For Gerbner, it is the "violence index" for prime time and weekend morning; for CBS, the rate of violent incidents per hour for prime time; and, for Greenberg, the rate of antisocial acts per hour for prime time and Saturday morning. By including additional measures, tables 2 through 5 also permit comparisons among those maximally similar.

Gerbner includes all violent events, including disasters, accidents, and natural calamities, and verbal threats that, by being accompanied by the display of a weapon or some other show of force, have a credible likelihood of fulfillment. Greenberg focuses on both physical and verbal acts of aggression, and the definition apparently includes acts of nature, for it is "that which is psychologically or physically injurious to another person or persons whether intended or not, and whether successful or not." CBS excludes natural disasters and calamities, confining itself to "the use of physical force against persons or animals or the articulated, explicit threat of physical force to compel particular behavior on the part of a person." CBS and Gerbner differ in identifying separable acts, with CBS embracing more and thus offering a lower count per hour than Gerbner; Greenberg offers a higher count because he encompasses a greater diversity of events. Gerbner includes all violence because it is all crafted invention and thus informative of the character of violence in television drama. Greenberg isolates behavior that is unconducive to constructive social interaction. CBS emphasizes episodes that involve interpersonal criminal or physically threatening behavior on the grounds that it is such portrayals over which there has been concern.

The discrepancies create puzzlement for anyone attempting to employ measures of violence as an index of

Table 2

Summary Measures of Violence, 1973–74 through 1978–79

Source and Unit of Analysis	73–74	C	74–75	C	75–76	C	76–77	C	77–78	C	78–79
Gerbner:											
VI, PTw	160	+14	183	−3	177	+15	204	−19	166	+10	183
VI, PT	132	+32	174	−8	160	+14	183	−16	154	−1	153
VA/H, PTw	7.0	−1.4	6.9	+12	7.7	+23	9.5	−30	6.7	+24	8.3
VA/H, PT	4.9	+10	5.4	+11	6.0	+2	6.1	−10	5.5	−18	4.5
CBS: VI/H, PT	2.3	+9	2.5	−24	1.9	+21	2.3	−17	1.9	−16	1.6
Greenberg:											
AS/H, PTs	*	*	*	*	42.4	−10	38.3	+10	42.4	*	*
PA/H, PTs	*	*	*	*	14.5	+5	15.2	−7.2	14.1	*	*

C = Change
VI, PTw = Violence Index, Prime time & weekend morning
VA/H, PTw = Violent Acts per Hour, Prime time and weekend morning
AS/H, PTs = Antisocial Acts per Hour, Prime time and Saturday morning
VI/H, PT = Violent Incidents per Hour, Prime time
VI, PT = Violence Index, Prime time
VA/H, PT = Violent Acts per Hour, Prime time
PA/H, PTs = Acts of Physical Aggression per Hour, Prime time and Saturday morning
*empty cells

Table 3

Measures of Violence by Network, 1973–74 through 1978–79

Source and Unit of Analysis	Network	73–74	C	74–75	C	75–76	C	76–77	C	77–78	C	78–79
Gerbner:												
VI, PTw.........	ABC	138	+36	188	− 1	186	+11	207	−26	154	+21	186
	CBS	174	− 0.6	173	−12	153	+19	182	−13	159	+15	183
	NBC	172	+10	189	+ 3	194	+15	224	−15	190	−6	179
VI, PT..........	ABC	101	+94	196	− 8	180	+ 9	196	−31	136	+21	165
	CBS	152	± 0.0	152	−20	122	+23	150	− 3	146	− 7	136
	NBC	147	+21	178	+ 2	182	+16	212	−11	188	−15	159
VA/H, PTw.....	ABC	6.1	+16	7.1	+18	8.4	+ 6	8.9	−33	6.0	+35	8.1
	CBS	7.8	− 8	7.2	−11	6.4	+30	8.3	−11	7.4	+32	9.8
	NBC	7.1	− 8	6.5	+29	8.4	+32	11.1	−42	6.4	+ 9	7.0
VA/H, PT.......	ABC	3.9	+54	6.0	+20	7.2	−10	6.5	−31	4.5	+ 2	4.6
	CBS	5.7	± 0.0	5.7	−21	4.5	+ 4	4.7	+36	6.4	−31	4.4
	NBC	5.2	−12	4.6	+33	6.1	+13	6.9	−23	5.3	−13	4.6
CBS: VI/H, PT......	ABC	2.3	+26	2.9	−17	2.4	+ 4	2.5	−24	1.9	−21	1.5
	CBS	1.9	+26	2.4	−38	1.5	+ 7	1.6	+19	1.9	− 5	1.8
	NBC	2.6	−15	2.2	−18	1.8	+56	2.8	−29	2.0	−20	1.6
Greenberg:												
AS/H, PTs......	ABC	*	*	*	*	50.4	−25	37.9	+ 9	41.4	*	*
	CBS	*	*	*	*	41.9	+ 1	42.3	± 0.0	42.4	*	*
	NBC	*	*	*	*	36.8	+19	43.7	− 2	43.0	*	*
PA/H, PTs......	ABC	*	*	*	*	20.5	−22	15.9	−13	13.9	*	*
	CBS	*	*	*	*	13.5	−30	9.5	+29	12.3	*	*
	NBC	*	*	*	*	10.2	+90	19.4	−18	16.0	*	*

C = Change
VI, PTw = Violence Index, Prime time & weekend morning
VA/H, PTw = Violent Acts per Hour, Prime time and weekend morning
AS/H, PTs = Antisocial Acts per Hour, Prime time and Saturday morning
VI/H, PT = Violent Incidents per Hour, Prime time
VI, PT = Violence Index, Prime time
VA/H, PT = Violent Acts per Hour, Prime time
PA/H, PTs = Acts of Physical Aggression per Hour, Prime time and Saturday morning
*empty cells

the performance of broadcasting in the public interest. For example, if one were to award a prize or impose a penalty for the network with the least or most violence, the winners and losers year by year would almost invariably be different, depending on whose concept and which measures were employed (table 3). Although discrepancies may in part derive from actual differences in the programing included in the sample, the unavoidable conclusion is that they principally reflect differences in the conceptualization of violence preferred by the varying investigators, and in the definitions by which these differing conceptualizations become operationalized. This interpretation is supported by the fact that differences certainly remain when the sample is almost identical (Gerbner and Greenberg employing roughly the same week of fall programing), but they diminish considerably when comparisons are confined to similar indices (acts of violence per hour), even when the samples differ (CBS and Gerbner; the former employed 13 weeks of prime time programing, the latter 1 week plus weekend morning programing).

Because each of the schemes has some claim to validity, the person with loyalty to none who would sit in judgment over the medium is in a quandary. Unhappily, there is legitimate disagreement over the principal effects of exposure to television violence and the parameters that demarcate the kinds of portrayals that bring about these effects. Those who agree with Gerbner about cultivation of perceptions may or may not accede to his concept for monitoring violence. Those who give greater weight to the possible influence of violent portrayals on aggressive and antisocial behavior may or may not prefer the concepts employed by Greenberg or by CBS.

Table 4

Summary Measures of Violence, 8–9 p.m. and 9–11 p.m., 1973–74 through 1978–79

Source and Unit of Analysis	Time Period	73–74	C	74–75	C	75–76	C	76–77	C	77–78	C	78–79
Gerbner:												
VI.........	8–9	126	+10	138	−25	104	+39	145	− 3	140	−17	116
	9–11	137	+50	205	− 1	203	+ 3	209	−21	165	+ 9	180
VA/H	8–9	5.1	−24	3.9	+ 5	4.1	+15	4.7	+13	5.3	−24	4.0
	9–11	4.8	+37.5	6.6	+ 4	6.9	− 1	6.8	−16	5.7	−16	4.8
CBS: VI/H	8–9	2.2	−23	1.7	−59	0.7	+100	1.4	+14	1.6	−12	1.4
	9–11	2.3	+26	2.9	−10	2.6	+ 4	2.7	−22	2.1	−14	1.8
Greenberg:												
AS/H	8–9	*	*	*	*	38.8	−14	33.5	+19	39.8	*	*
	9–11	*	*	*	*	41.3	− 9	37.7	+19	44.7	*	*
PA/H	8–9	*	*	*	*	8.8	+ 6	9.3	+28	11.9	*	*
	9–11	*	*	*	*	15.6	− 8	14.4	−17	11.9	*	*

C = Change
VI = Violence Index
AS/H = Antisocial Acts per Hour
VA/H = Violent Acts per Hour
VI/H = Violent Incidents per Hour
PA/H = Acts of Physical Aggression per Hour
*empty cell

The unaligned inquirer must proceed with caution. Nevertheless, the data are not beyond interpretation. Rate of violent acts is accepted by all as a meaningful measure, and there is the possibility of the convergence of the dissimilar representative measures. Thus, it remains possible to inquire about trends in violence, the effect of the short-lived family viewing policy, and the efficacy of the campaigns against television violence conducted by the PTA, AMA, and others.

There is no detectable trend (tables 2-3). Regardless of measure, changes that within the scope of 2 or 3 years would appear to constitute an upward or downward shift become, in the longer run, oscillations. The data are inconsistent in regard to "family viewing" (table 4). By the Gerbner "violence index," violence in its sole season, 1975–76 (table 4), declined prior to 9 p.m. and remained about the same between 9 and 11 p.m. By the Gerbner measure of frequency of violent acts, violence before 9

Table 5

Violence in Children's Programing, 1973–74 through 1978–79

Source and Unit of Analysis	73–74	C	74–75	C	75–76	C	76–77	C	77–78	C	78–79
Gerbner:											
VI, WM	212	−5	202	+ 4	211	+17	247	−15	209	+19	249
VA/H, WM........	13.2	−8	12.2	+16	14.2	+58	22.4	−30	15.6	+60	25.0
CBS	*	*	*	*	*	*	*	*	*	*	*
Greenberg:											
AS/H, SM	*	*	*	*	51.6	− 8	47.3	−11	41.9	*	*
PA/H, SM	*	*	*	*	22.9	+10	25.2	−16	21.2	*	*

C = Change
VI, WM = Violence Index, Weekend Morning
VA/H, WM = Violent Acts per Hour, Weekend Morning
AS/H, SM = Antisocial Acts per Hour, Saturday Morning
PA/H, SM = Acts of Physical Aggression per Hour, Saturday Morning
*empty cell

p.m. remained stable but increased between 9 and 11 p.m. By the CBS measure of frequency of violence, it declined both before 9 p.m. and between 9 and 11 p.m. The sole point of convergence is that there was less violence before 9 p.m. than between 9 and 11 p.m. before, during, and after "family viewing." As to the subsequent PTA and AMA campaigns against violence, some initial success may be reflected in the convergence of several measures in registering a decline in 1976–77 (table 2). Even here, a conclusion must be qualified by the fact that the most inclusive Greenberg measure, which adds verbal aggression and deceit to physical aggression, registered an increase. The data are inconsistent as to whether there was a further decrease or an increase in the following season. Both the Gerbner and Greenberg data (table 5) concur that children's programing on weekends has been more violent than television as a whole, prime time, or either the before 9 p.m. or between 9 and 11 p.m. prime time segments (tables 2 and 4) and that violence declined in 1977–78.

Public Perceptions and Beliefs

A highly intriguing area of new empirical inquiry began when Gerbner and his colleagues in 1973 reported on data in which public perceptions ostensibly more in congruence with the fiction of television drama than the real world were more frequent among persons who also regularly viewed more hours of television (Gerbner and Gross 1973). This thrust evolved directly out of Gerbner's theoretical position that the major influence of television derives from the consistency of its messages that reach so many so regularly and from his annual content analyses which provide a statistical description of the makeup of television drama. The basic technique was to offer persons a choice between a statistic more in accord with the real world and one more in accord with the makeup of television drama, and then compare the replies of persons who could be said to be heavier or lighter viewers. The statistics described such aspects of the world as the risk of falling victim to a crime or assault, the proportions engaged in such professions and occupations as law enforcement and entertainment, and the proportions of persons in the world who are U.S. citizens. In each case, television drama is in sharp demographic contrast with truth. The early findings were quite consistent: Persons who regularly viewed more hours of television more frequently selected statistics more in accord with television drama than actuality.

Since then, the proposition has been examined in a number of samples by a diverse number of investigators (Doob and Macdonald 1979; Gerbner and Gross 1973, 1974, 1976, 1980; Gerbner et al. 1977*a*, 1979*a*, 1979*b*, 1980*a*, 1980*b*, 1980*c*, 1981; Hawkins and Pingree 1980; Hirsch 1980*a*, 1980*b*, 1981; Hughes 1980; Piepe et al. 1977; Stevens 1980*a*, 1980*b*; Wober 1978). Although there are plenty of opportunities for perceiving inconsistencies and conflicts, there is also enough of a pattern and sufficient points of congruence that a set of propositions can be tentatively advanced as hypotheses for which there is some support. This pattern can be best perceived if these investigations are construed as focusing on two distinct topics pertinent to the effects of television violence, though such a distinction and terminology have not been employed by the authors:

1. *Fearfulness*, measured variously by such indices as the estimated risk of being robbed, murdered, or otherwise falling victim to a crime, or the inadvisability of certain kinds of behavior, such as walking in parks.
2. *Pessimism*, measured variously by such indices as the estimated crime rate, the extent to which people can be trusted, and the degree to which the quality of life is getting worse.

It is in these topics that the new research becomes set apart somewhat from a broader sphere of inquiry with which it shares a certain commonality—that concerned with relationships between mass media use and beliefs and perceptions. From one perspective, this new line of inquiry is a subspecies of the study of attitude change, where interest in the influence of the mass media has been prominent. From another, it can be construed as an elaboration of the evidence collected by Dominick and Greenberg (1972) and by Greenberg (1975) that the viewing of violence is associated with the holding by young persons of attitudes and beliefs favorable to the use of violence, such as a greater belief in its efficacy and greater expressed willingness to use violence to resolve a conflict. However, the new studies depart from the attitude-change research by the rather sweeping formulation which holds the social ambience implied by a medium responsible for the effect, and from the research concerned with the encouragement of attitudes favorable to violence by the focus on a negative world view whose implications are different than possibly promoting violent behavior.

Two issues have become of major concern:

1. *Association:* Are such beliefs and perceptions generally and in a consistent way associated with the viewing of television or the use of other mass media?
2. *Causality:* Is the association involving television causal, in the sense that television viewing contributes to the holding of these beliefs and perceptions?

Association

When the various data on adults are examined, the evidence supports the view that both fearful and pessimistic beliefs and perceptions are associated with higher use of television and greater exposure to television violence. Gerbner and his colleagues have consistently documented such an association within U.S. samples, using heavy and light viewing as presumptively discriminative between greater and lesser exposure to television violence. Doob and Macdonald found similar relationships with both greater exposure to television and to television violence specifically for a Toronto sample. There are studies with contrary results, but they do not provide any reason to doubt that such a relationship is common in North America.

Wober (1978) and Piepe et al. (1977) separately found in England no evidence of such associations. However, it seems more plausible to look to differences between English and North American cultures and to the techniques they employed, for the explanation, rather than to interpret their null results as a challenge to the North American data. Doob and Macdonald (1979), for example, found that such beliefs and perceptions also were related to sex, age, and community crime rate, which is a rough index of social class, with women, older persons, and the socioeconomically disadvantaged, if residence in a high crime area can be taken as a surrogate for lower socioeconomic status, more fearful and pessimistic. Gerbner and colleagues have also frequently reported that socioeconomic status has been associated with such beliefs and perceptions. Wober reports no clear pattern of such correlates, and the absence of this basic commonality with the North American data means that it would be rash to take other findings as pertinent to North America. In addition, both Wober and Piepe et al. employed only two items, raising the possibility that the results reflect vagaries associated with particular questions, while Gerbner and colleagues and Doob and Macdonald reach their conclusions from the pattern of response to a much greater number of items.

Causation

Causality in most instances is a determination with which one is destined to flirt but rarely to marry. In this instance, the evidence suggests that greater intimacy is justified in the case of pessimism rather than fearfulness.

When Stevens subjected one of the national samples previously analyzed by Gerbner to surrogate controls—socioeconomic status and place of residence—for community incidence of crime, the positive relationship between television viewing and fearfulness disappeared. Doob and Macdonald (1979) arrived at the same result when they subjected their Toronto data to a stepwise multiple regression in which community instance of crime, urban or suburban place of residence, sex, and age were entered before total television viewing and exposure to television violence; living in a high crime area, being female, and being older were positively related to fearfulness, but the television measures were not. Hughes (1980) and Hirsch (1980*b*) similarly found that, when controls for sex, age, socioeconomic status, and other variables were introduced simultaneously, the relationship observed in a national sample of adults between exposure to television and fearfulness disappeared. In a variety of samples, Gerbner and colleagues found that the positive relationship between television exposure and fearfulness was not the artifact of an association between amount of television viewing and some single third variable and between fearfulness and that same variable. The more recent analyses diminish the likelihood that such an interpretation is correct, at least for many segments of the public, but they do not at all reduce the probability to zero.

When Doob and Macdonald analyzed their data separately for the four residential sites they examined, urban versus suburban, and high versus low crime, they reported that a statistically significant and positive association between both television viewing and exposure to television violence and fearfulness remained for one site, the high crime urban area. This raises the possibility that their data, instead of indicating no relationship when other factors are taken into account, in fact specify a condition under which the relationship occurs—living in a dense area of high crime, a circumstance in which risk and knowledge of risk would presumably be maximized and the efficacy of defensive efforts minimized. Furthermore, it must be recognized that the size of the Doob and Macdonald samples (between 69 and 83 adults within each of the four sites) imposes a threshold for statistical significance that a modest degree of positive or negative association, however real, cannot overcome, so that there may be actual enough relationships between fearfulness and various measures of television and other media exposure that would receive recognition with larger samples. Finally, it is not clear that community crime rate and even personal characteristics should be given precedence over television exposure, as occurred in their stepwise multiple-regression analysis. There is an admittedly inherent appeal to ascribing greater influence to the palpable fact of real events and personal characteristics, but television also has a claim to palpability, and there is no inherent justification for preferring neighborhood character over television; one could just as readily argue that television exposure explains a relationship that upon first glance appears to be a function of community character.

Thus, the findings somewhat reduce confidence that the association documented with such regularity between television exposure and fearfulness reflects an effect of which television exposure is the cause, and the findings support the view that any hypothesized contribution to fearfulness of television exposure does not apply equally to all segments of the public.

Pessimism

The situation is somewhat different in regard to pessimism. As with fearfulness, Gerbner and colleagues of course have consistently found such beliefs and perceptions associated with television exposure when variables such as socioeconomic status, sex, and age have been taken into account singly. Doob and Macdonald found that television viewing and exposure to television violence were positively related to such beliefs, such as beliefs concerning the frequency of murders in Toronto and the advisability of carrying a weapon, after community crime rate was taken into account. Stevens, too, found that taking into account community character did not cause the association between television exposure and his pessimism variables to disappear. Hughes found a positive relationship between television exposure and skepticism over the interest of public officials in the welfare of the average citizen. Gerbner and colleagues report that, for certain subgroups within a national sample, the simultaneous introduction of control variables does not result in the disappearance of a positive association between television exposure and "anomie"—in this case a scale labeled the "mean world index" measuring agreement that "most people look out for themselves," "you must be careful in dealing with people," and "most people given an opportunity will take advantage of you," components closer to "pessimism" than to "fearfulness." Thus, pessimism appears to function somewhat differently in public thought than fearfulness, and there is a stronger likelihood that television contributes to pessimism than that it contributes to fearfulness.

This differential pattern of findings for fearfulness and pessimism gives further reason for not attaching too much importance to the findings of Wober and of Piepe et al., as pertinent to the North American experience. Wober combined measures of distrust, a pessimism variable, and of the perceived likelihood of being robbed, a fearfulness variable, which, if the two classes of variables in fact differ in their sensitivity to influence by television, would render Wober's paranoia scale insensitive. Piepe et al., in contrast, employed two pessimism queries—the frequency of violent incidents "around here" and subscription to the view that "these days one doesn't know whom he can depend on"—and their failure to find a relationship with television viewing, given the consistency over various samples for the relationship in North America, encourages the interpretation that their data specify a cultural or societal difference.

Two Patterns

Data collected by Tyler (1978) on beliefs and perceptions about vulnerability and direct and indirect experience with crime provide some insight on the two different patterns. He conducted personal interviews with a sample of 224 Los Angeles adults regarding their direct experience with crimes they had experienced or observed, their indirect experience through conversations with neighbors, and their indirect experience through reports in the mass media. He then analyzed the relationship of such experiences with feelings of personal vulnerability, the taking of steps and maneuvers to protect oneself against crime, and estimates of the community crime rate. The taking of protective measures was related to direct experience with crime. Indirect experience interpersonally conveyed was unrelated both to the taking of protective steps and feelings of vulnerability. Indirect experience with crime through reports in the mass media was not associated either with the taking of protective steps or with feelings of vulnerability. However, indirect experience with crime through mass media reports was related relatively strongly to higher estimates of community crime rate—but high estimates of community crime rate were unrelated either to feelings of vulnerability or the taking of protective steps. He also conducted telephone interviews with 1,618 adults in Chicago, Philadelphia, and San Francisco. Measures were obtained for the same variables but in a more truncated manner because of the limits of telephone interviewing. The taking of protective measures was principally related to feelings of vulnerability, although such steps were slightly related to indirect experience through mass media reports. Feelings of vulnerability were related to both direct personal experience with crime and indirect crime experience interpersonally conveyed, with the relationship stronger in the latter than in the former instance. Estimates of the community crime rate were modestly related to both indirect experience conveyed interpersonally and indirect experience through reports in the mass media, with the relationship stronger in the former than in the latter instance. Estimates of the community crime rate again were modestly related to taking of protective steps but again were unrelated to feelings of vulnerability.

The Los Angeles data are stronger in regard to the reliability, validity, and accuracy of the measures because of the greater depth of inquiry permitted by personal interviewing, but the three-city data are stronger in respect to sample size and thus sensitivity to detecting relationships. The second part differs from the first in the greater relationship of indirect interpersonally conveyed

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experience to the taking of protective steps and estimates of the crime rate, the presence of a relationship between indirect experience through mass media reports and the taking of preventive steps, and the much more modest relationship between indirect experience through the media and estimates of the crime rate. The degree to which these variations represent community differences or strengths or weaknesses of the methods employed is moot.

However, both sets of the Tyler data concur in a positive relationship between remembered exposure to crime in the mass media and estimates of the community crime rate, and both concur in no relationship between estimates of the community crime rate and feelings of personal vulnerability. Estimates of community crime rate are essentially what previously has been described as a measure of pessimism. These data thus support the view that fearfulness and pessimism may be differentially influenced by the mass media. They further suggest that vicarious experience through the mass media, such as through television entertainment, may not affect fearfulness, although it may affect pessimism.

The failure of a relationship to appear in either set of data between estimates of the crime rate and vulnerability furthermore suggests that an influence on pessimism may have no influence on fearfulness. This does not so much contravene commonsense as make commonsense somewhat more sensible. Vulnerability and fearfulness are likely to ensue from estimates of one's personal risk, which in turn derive from one's sense of control over and understanding of the environment. Increases in the estimated community crime rate or in other perceptions and beliefs of pessimistic nature probably do not much affect personal feelings of security, unless these increases are extreme.

Young Viewers

Gerbner and colleagues (Gerbner et al. 1979*a*, 1980*b*; Gross and Morgan in press) have reported positive associations between exposure to television and various beliefs and perceptions of fearfulness and pessimism within a variety of samples of children and adolescents that have remained after the introduction of control variables, such as socioeconomic status and race, singly and, in at least one instance, simultaneously. In their most recent analysis (Gerbner et al. 1980*b*), they report that among a New Jersey sample of adolescents there was a net increase on both dimensions associated with greater viewing in the previous year, independent of any contribution of demographic characteristics and scores on these dimensions in that previous year. Hawkins and Pingree (1980) found a positive association, after the introduction of various control variables, among Australian adolescents but not among younger children, between exposure to television and the degree of violence perceived in the world and accord with the "mean world index." Zill (1981) also reported an association between such beliefs and perceptions and television viewing for a national sample of American children. The hypothesis that children's beliefs and perceptions are related to exposure to television entertainment is also supported by the findings of Dominick and Greenberg (1972) and by Greenberg (1975) that greater viewing of violence is positively associated with attitudes favorable to the use of violence.

The temptation to assume that the pattern of relationships and the evidence for causality in regard to television viewing is the same as for adults must be resisted. The very factors on which the adult pattern may hinge—control over the environment, a sense of the likelihood of dire events given one's behavior, and the ability to discriminate between first-hand and indirect experience with crime—are likely to be attenuated in young viewers, particularly children. At the same time, the paucity of crimes against children and adolescents in the violence portrayed on television may render some of its message less telling, although it must be acknowledged that by the Gerbner "victimization ratio" the small proportion of adolescent boys (about 6 percent of all male characters between 1969-70 and 1979-80) score as most "victimized," and about half were somehow involved in violence, and that, while the small proportion of adolescent girls (about 8 percent of all female characters over the same period) score as least "victimized" of all females, about a third were somehow involved in violence. One could argue that the more restricted access of children to sources of information and their more limited knowledge, compared to adults, present a presumptive case in behalf of a causal contribution to fearfulness and pessimism by television, but one could also argue that children most likely to be in families and circumstances of high risk are also likely to be children who view a particularly large amount of television. Evidence on young viewers supports the hypothesis that a positive association exists between television viewing and beliefs and perceptions about fearfulness and pessimism, but until analyses comparable to those available for adults have been performed, little can be said with any confidence either about causation or about a differential pattern for fearfulness and pessimism.

Alternative Hypotheses

There are, of course, numerous alternative explanations other than the direction cultivation of perceptions and beliefs that may lie behind any association between them and television viewing. Stevens (1980*a*) proposed that, among persons of higher socioeconomic status, pessimism and television viewing would be associated because of a general dissatisfaction with life, in particular with use of leisure. He reasons that persons with greater education are more likely to be skeptical of the value of television viewing and more likely to have high expectations in regard to the satisfaction to be derived from leisure. Thus, those among them who, as a result of whatever circumstances, engage in a great deal of television viewing also might be expected to be more than ordinarily dissatisfied with their lives, and this dissatisfaction might find expression in a pessimistic outlook. In support of this interpretation, he reports precisely such a correlation among those of higher socioeconomic status that is not present for viewers of somewhat lesser socioeconomic status. Doob and Macdonald, on the other hand, found that both pessimism and vulnerability remained positively associated with television viewing among residents of a high crime, highly urban area, which presumably would contain many persons of low socioeconomic status. This raises the possibility of a curvilinearity in direct cultivation, with the viewers most affected either those whose real-life environment gives credence to the message of television or those who have the most to lose and have the least regular experience with crime and modes of effective protection. Still another alternative explanation is that fearful and pessimistic persons are motivated to view violent television because of the consistent theme that transgressors of the law are eventually punished, thereby deriving solace and comfort from viewing. Certainly, all the hypothesized processes may be occurring simultaneously among some groups and persons, the presence of the predominance of one or another may vary among segments of the public, and one or another may conceivably hold for the public as a whole. The data at present should not be construed as either confirming or disconfirming the cultivation of beliefs and perceptions by television; what the data recommend unequivocally is further inquiry.

Conclusion

Public misgivings about the influence of television, empirical research on the effects of television, and empirical analyses of television content have interacted for the past 30 years. Empirical research in both spheres has reacted to and been stimulated by these misgivings and have to some degree affected the behavior of broadcasters, citizens' groups, congressional committees, Congress, and the Federal Communications Commission. Evidence supporting the view that exposure to portrayals of violence may have some effects beyond diversion and entertainment has accumulated. The character, pattern, and trends in television violence have been documented from a number of perspectives, without achieving a consensus on the appropriate means of usefully and accurately monitoring the performance of broadcasting. In some instances, however, there is sufficient consistency in the conclusions to which application of the differing perspectives leads that the differences pose no real bar to a consensual conclusion. Examples are the high degree of violence in chidren's programing and recent trends in the quantity of physical aggression in television entertainment. From the scientific viewpoint, the most encouraging development in recent years has been the fusion of the empirical measurement of violent content with the investigation of the relationship between exposure to violent programing and fearful and pessimistic beliefs and perceptions. From the same perspective and also from that of some concerned with the monitoring of television content that might encourage aggressive behavior, the greatest disappointment is that no one has attempted a fusion of the evidence on the aspects of portrayals that increase or decrease the likelihood of subsequent aggressive behavior by viewers and the empirical measurement of television violence.

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Television Violence and Aggressive Behavior

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In the 10 years since the Surgeon General's studies were undertaken, research on television violence and aggressive behavior has continued at an accelerated rate. The empirical findings that led the Surgeon General to his conclusion of "a causal relation between viewing violence on television and aggressive behavior" have mostly been confirmed by recent research. But the controversy regarding the explanation of these results has not subsided, and there is little evidence that significant programing changes have been stimulated by the results. One explanation may be that too much emphasis has been placed on the collection of empirical data and too little on the organization of these data into a coherent theoretical framework.

While many explanations have been offered for the observed relations between television violence and aggression, few have been elaborated formally. Too often researchers have used terms such as observational learning, catharsis, or desensitization very loosely. Instead of developing detailed models of the psychological processes postulated to mediate the television violence—aggression relation, researchers have concentrated on collecting data. The outcome has been a large body of data that is difficult to fit into any comprehensive explanatory model. Few, if any, process theories have been negated, because none has been developed formally enough to be readily falsifiable. The emphasis has been on describing relations between variables rather than on discovering and elucidating processes.

In this review,[1] I present the recent research concerning the several processes hypothesized to account for the relation between violence viewing and aggressiveness. Such an organization of evidence may provide the means for a clearer understanding of the relation between violence viewing and aggression and stimulate the formalization of process models. Future research should be guided by such models.

At least five kinds of processes have been postulated to explain the relation between violence viewing and aggression: (1) observational learning through which aggressive behaviors depicted on television are learned by a viewer; (2) catharsis through which a viewer's "drive" to perform aggressive behaviors is reduced by watching actors behave aggressively; (3) changes in emotional or physiological arousal and responsiveness that are engendered by violence viewing and affect aggressiveness; (4) attitude changes that result from exposure to television violence and that then affect behavior; and (5) justification processes in which violence is watched by aggressive children because it provides an opportunity to rationalize their own aggressive behavior as the norm.

Three of these processes, observational learning, attitude change, and justification, clearly predict that a positive relation obtains between violence viewing and aggression. The proposed theories concerning arousal generally are assumed to yield the same prediction but possess some inherent contradictions that might be used to explain an opposite outcome. The catharsis process would seem to predict a negative relation between violence viewing and aggression, but it is so broadly defined that a positive relation probably need not negate it. Therefore, before specific evidence relevant to each process is presented, the evidence concerning the existence of a positive or negative relation between violence viewing and aggression without reference to the cause is reviewed.

At this time, it should be difficult to find any researcher who does not believe that a significant positive relation exists between viewing television violence and subsequent aggressive behavior under most conditions. Comstock (1980) reports that about 50 laboratory experiments showing a positive relation between violence viewing and immediate aggression had been published by the time the Surgeon General's Committee report was written. While negative results are less likely to be published, the replicability of the basic laboratory result (that exposure of a child to certain kinds of media violence increases the immediate likelihood of certain aggressive responses) was beyond challenge at this point. More controversial are the data collected outside the laboratory. If no evidence were found in the field of a positive relation between a child's television violence viewing and aggressive behavior, it would be hard to maintain that the observational learning of aggressive behaviors had a major impact on society. However, the majority of survey data available at the time of the report to the Surgeon General already indicated that there was a positive correlation. As Chaffee's (1972) review demonstrated, differences in sampling procedures and techniques for measuring violence viewing or aggressive behavior seem to have substantial effects on the strength of the relation found; nevertheless, highly significant positive correlations ranging from .15 to .30 are most common.

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A number of observational field studies have been conducted since the report to the Surgeon General, and, like the previous surveys, most have provided evidence of a positive relation between violence viewing and aggression (Lefkowitz and Huesmann 1980). Three of them deserve special attention. In a project funded by the Columbia Broadcasting System (Belson 1978) collected data on 1,650 teenage boys in London. Though he did not obtain longitudinal data, on the basis of analyzing matched subgroups, he concluded that "the evidence . . . is very strongly supportive of the hypothesis that high exposure to television violence increases the degree to which boys engage in serious violence" (p. 15). More causally conclusive are the data of Singer and Singer (1980). They followed a sample of 3- and 4-year-olds over the course of a year and carefully measured a number of variables at four different times. A variety of different multivariate analyses of these data all point to the same conclusion—that television viewing, particularly violence viewing, is a cause of heightened aggressiveness in children of that age. The Singer investigation is particularly noteworthy because the researchers distinguished between the different processes by which media violence might affect children and attempted to test the role of a number of cognitive and familial mediators in the relation. Also, of special significance is a 5-year longitudinal study by McCarthy et al. (1975), in which data from 732 children were obtained, clearly supporting the hypothesis that television violence viewing is related to aggression. All of their data on children's aggression, including conflict with parents, fighting, and delinquency, were positively correlated with a frequency-weighted violence score. Unfortunately, since television viewing data were not collected in the first wave of the study, no causal analyses could be undertaken. However, the finding that amount of television viewed was positively related to aggression was particularly interesting. While older studies (Eron 1972; Robinson and Bachman 1972) had found no relation between total amount of viewing and aggression, the study by McCarthy et al. and two other studies reported below all found positive relations between simple frequency of television viewing and aggression.

Two recent studies of the impact of television on previously unexposed populations have confirmed the positive relation between aggressiveness and television viewing. Williams (1978) collected data in a small community in Canada before and after television was introduced in 1973. She compared these data with data collected at the same times from two communities which had had television for many years. The pre-post increases in both verbal and physical aggression by primary school children were significantly greater for the experimental town than for the two control towns. In a similar study, Granzberg and Steinbring (1980) compared a Cree Indian community into which television was being introduced with a control Indian community and a control Euro-Canadian community. No pre-post differences in levels of aggression between the exprimental and control communities, taken as a whole, occurred. But, when children were classified by amount of daily exposure to television, significant differences in aggressive attitudes emerged. The introduction of television into the community increased the aggressiveness of those children who watched a lot of television. In these studies and in the one by McCarthy et al. (1975), amount of television viewed proved to be the critical potentiating variable in elucidating the relation between violent television and aggressive behavior.

A similar conclusion can be drawn from the data Eron and Huesmann collected over the past 4 years with the cooperation of colleagues in several other countries (Eron and Huesmann 1980*a;* Eron and Huesmann 1980*b;* Huesmann et al. 1981; Huesmann et al. 1978; Rosenfeld et al. 1978; Eron et al. 1980; Lagerspetz 1979; Fraczek 1980). This longitudinal study involved interviewing and testing a substantial sample of first and third graders, retesting them 1 year later and again after 2 years. The samples studied so far have come from the United States (758 children), Australia (289 children), Finland (220 children), Poland (237 children), and Holland (569 children). While all of the data have not yet been analyzed, results are available from the United States, Finland (Lagerspetz 1979), and Poland (Fraczek 1980). As table 1 reveals, in *each* of these countries significant positive relations have been found between television vio-

Table 1

Correlations Between Television Violence Viewing and Peer-Nominated Aggression

	All Subjects	Males	Females
U.S.A. (*N*=758):			
1st grade	.212****	.160*	.210***
2nd grade	.234****	.204**	.245****
3rd grade	.232****	.191**	.205**
4th grade	.224****	.184*	.260****
5th grade	.261****	.199*	.294****
Finland (*N*=220):			
1st grade	.141	.026	.139
2nd grade	.163	.266*	.022
3rd grade	.257***	.038	.052
4th grade	.228*	.381***	−.158
Poland (*N*=237):			
1st grade	.227**	.296**	.070
3rd grade	.293****	.259**	.236*

p>*.05. p>**.025. p>***.01. p>****.005.

lence viewing and peer-nominated aggressive behavior. In contrast to previous results, which were significant only for boys (Lefkowitz et al. 1977), these positive relations obtained for both boys and girls in both the first- and third-grade cohorts. In these investigations, violence viewing was measured from the child's self-report which, as Chaffee's (1972) survey suggests, may be more valid than the parental reports used in earlier research. The simple frequency of television viewing also correlated highly with aggression. In fact, the best prediction of a child's aggressiveness was derived when the investigators included only the violence scores for programs the child watched "almost always."

Two other field studies published subsequent to the report to the Surgeon General also provided support for the television violence-aggression relation. In a study of adolescents in the United States, Hartnagel et al. (1975) found a significant though low correlation between violence viewing and aggressive behavior. Furthermore, those subjects who perceived television programing as violent or perceived the violence as an effective means to a goal engaged in more violent behavior than did those who did not perceive their favorite show to be violent. Finally, Greenberg (1975) found correlations between violence viewing and aggression in a sample of London school children, correlations that were remarkably similar to those reported for U.S. children.

Several field experiments in which violence viewing was manipulated must also be mentioned. While most of these experiments have had flaws, the majority (Stein and Friedrich 1972; Leyens et al. 1975; Loye et al. 1977) yielded evidence of a positive relation between violence viewing and aggression. For example, in one recent field experiment (Parke et al. 1977), juveniles in institutions in the United States and Belgium were exposed to 5 days of violent or control films. In both countries, those children who saw the more violent films were observed acting more aggressively during the 5 days. Two well-known field experiments that found no relation (Feshbach and Singer 1971; Milgram and Shotland 1973) demonstrate the difficulty of generalizing the techniques successfully used in a laboratory to a field setting. However, many more plausible explanations exist for the lack of results than that violence viewing and aggressiveness are unrelated (Comstock 1980).

Recently several authors have also generated compilations of the existing research relating violence viewing to aggression (Andison 1977; Hapkiewicz 1979; Hearold 1979). While such compilations inevitably suffer from averaging the competent studies with the incompetent ones, they provide convenient statistical summaries indicating the overwhelming nature of the evidence for a positive relation between violence viewing and aggression. A few survey studies commissioned by television networks have not yet been published so they are difficult to evaluate (Comstock 1980). One hopes that their major function and the major function of future surveys will be to test some of the specific process models.

In summary, while the strength of the relation changes as a function of situational determinants, population characteristics, and measurement techniques, the evidence seems overwhelming that television violence viewing and aggression are positively correlated in children. The issue is what processes produce this relation.

Observational Learning

According to advocates of observational learning, children learn to behave aggressively from watching violent actors on television just as they learn cognitive and social skills from watching parents, siblings, peers, and others. Since Bandura's original laboratory experiments (Bandura et al. 1961; 1963) suggested the validity of this thesis, a number of experiments and field studies attempted to test and elucidate the theory (Bandura 1977). While the research illuminated some of the conditions under which behaviors portrayed in the media are most likely to be imitated, the actual importance of observational learning in determining the aggressiveness of children has not been settled.

Part of the problem has been that observational learning means different things to different people. Bandura's original definition was narrow and specifically behavioral. It has been expanded by some to include virtually any process by which an observed behavior influences a viewer. At the same time, many "purists" acted as if observational learning were a distinct process separated from a subject's other cognitive processes. In fact, until recently it was difficult to find evidence that many investigators of observational learning were aware of cognitive psychology. This diversity of understandings of observational learning has hampered the formation of precise models and contributed to some important controversies. For example, the issue of whether children learn a generalized disinhibition of aggression or learn specific aggressive acts becomes less important when one casts these theories in information-processing terms. Current information-processing models of memory provide a perspective in which these theories can be complementary rather than competing.

What is the evidence with regard to observational learning? First, there can be little doubt that in specific laboratory settings aggressive behaviors of actors are imitated by child viewers immediately after viewing. Large numbers of laboratory studies demonstrated this, even before the report to the Surgeon General appeared (Comstock 1980). The question is whether the positive relations observed in field settings can be explained by the imitation of the actors' behavior.

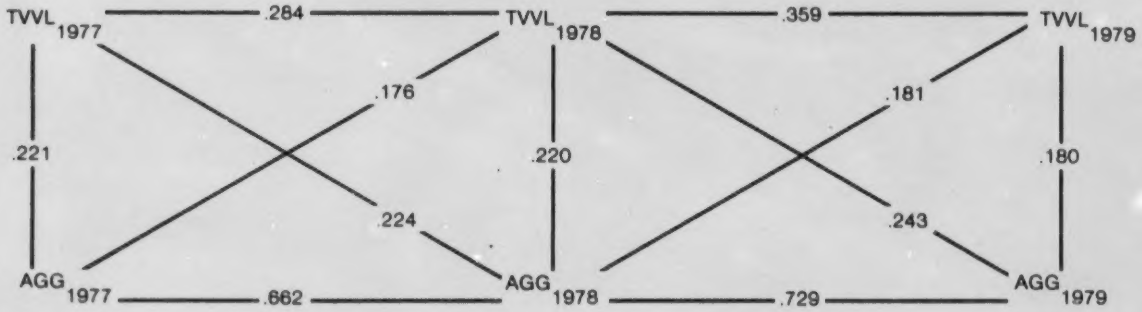
The study by Lefkowitz et al. (1977; Eron et al. 1972) provided the first substantial evidence from a field setting implicating observational learning. Without rehashing tired arguments, the results suggested that observational learning was the most plausible explanation of the positive correlations between violence viewing and aggression. While many researchers have appropriate reservations about the analyses used to extract causal inferences from these longitudinal observational data (Kenny 1972; Comstock 1978), the critiques advocating a complete rejection of the results (e.g., Armour 1975; Kaplan 1972) contained such serious errors of reasoning (Huesmann et al. 1973; Huesmann et al. 1979) that they have not had a major impact. Since the study by Lefkowitz et al., a number of other observational studies and field experiments have suggested that violence viewing is a precursor of aggression (Stein and Friedrich 1972; Leyens et al. 1975; Parke et al. 1977; Belson 1978; Huesmann et al. 1979; Singer and Singer 1980). Moreover, we recently found patterns of lagged correlations in our current U.S. sample which mirror our earlier findings (see table 2). However, all of these more recent studies can undoubtedly be criticized on methodological grounds as well. No field study is going to provide the "clean" outcomes available from the laboratory. Nevertheless, these studies are important for the theory of observational learning because their data do not contradict the predictions of the observational learning model.

It has become clear that the extent to which a child imitates an actor is greatly influenced by the reinforcements received by the actor. If the actor is seen being rewarded for aggressive behavior, the child is more likely to imitate that behavior (Bandura 1965; Bandura et al. 1963*a*; Walters et al. 1963). If the actor is punished for a behavior, that behavior is less likely to be modeled (Bandura 1965; Walters and Parke 1964). This appears to be true for prosocial as well as for antisocial behavior (Morris et al. 1973).

While such vicarious reinforcements influence the probability of the child emitting the actor's behaviors, the persistence of the behavior seems to depend upon the reinforcements the child receives. Interestingly, actual reinforcement does not seem to affect modeled behaviors any differently than it affects behaviors acquired in other ways. Bandura (1965) found that offering a reward for an aggressive act had no greater effect on children who had recently watched the act performed than on control children who had not observed the aggressive act. Linne

Table 2

Cross-Lagged Correlations Between Peer-Nominated Aggression and Television Violence Viewing Obtained in the Current U.S. Data



(1976) reports no difference in children's aggressiveness as a function of whether the consequences of aggressive acts were shown in a violent film. One of the problems with such studies is that the reinforcing properties of aggression are difficult to manipulate. For some children, aggressive behavior may often produce inherently reinforcing consequences. Hayes et al. (1980) recently showed that even the reflexive movement of objects aggressed against can be reinforcing to the aggressor. These authors also found purely additive effects for imitation and reinforcement on aggression.

A number of researchers attempted to determine the ages at which children are most susceptible to imitating observed behaviors. Eron et al. (1972) argued that, once an individual has reached adolescence, behavioral predispositions and inhibitory controls have become crystalized to the extent that a child's aggressive habits would be difficult to change with modeling. Collins (1973; Collins et al. 1974; Newcomb and Collins 1979) consistently found that young children are less able to draw the relation between motives and aggression and therefore may be more prone to imitate inappropriate aggressive behaviors. Hearold's (1979) review generally supports these views but suggests that modeling might increase again among adolescent boys. Perhaps the more important question, however, is at how young an age children begin to imitate behaviors viewed on television. Experiments by McCall et al. (1977) indicate that children as young as 2 years were facile at imitating televised behaviors, and some imitation was observed in even younger children.

Another factor frequently hypothesized to be implicated in observational learning is the viewer's identification with the actor or actress being modeled. Within the existing literature, however, the evidence is ambiguous on the role that identification plays in observational learning. Bandura et al. (1963*a*, 1963*b*) found that both boys and girls more readily imitated male rather than female models. In a longitudinal study with first- and third-grade children, Huesmann et al. (1978) found that, regardless of the child's sex, there are higher correlations of the child's aggressiveness with the child's viewing of male actors' violence than with the child's viewing of female actors' violence. This apparently greater influence of male models on children has been detected in data from Finland (Lagerspetz 1979) and Poland (Fraczek 1980) as well. In those countries, however, females seem to be more affected by female models than they are in the United States.

One of the problems with using gender as a measure of identification with a television model is that aggression is highly correlated with sex-role orientation (Huesmann et al. 1978; Lefkowitz et al. 1977). Girls who are aggressive may in fact identify more with male actors than with most female actors. An interesting finding from our current cross-cultural study has somewhat changed our perspective on this issue, however. Table 3 shows the correlations between neutral sex-role orientation and aggressiveness for boys and girls over the course of our 3-year study. While the relations between aggression and either a male or female orientation varied greatly with sex and grade, the relation between aggression and neutral orientation was consistently negative. Children who scored high on neutral sex role were ones who were flexible in their choice of games and activities and not bound by societal stereotypes. Perhaps such children are also more flexible in their choice of behaviors in frustrating situations and therefore less aggressive.

Table 3

Correlations Between Preference for Neutral Sex-Typed Activities and Peer-Nominated Aggression

	All Subjects	Males	Females
U.S.A. (*N*=758):			
1st grade	−.217****	−.175*	−.197**
2nd grade	−.210****	−.086	−.294***
3rd grade	−.180***	−.151	−.135
4th grade	−.170***	−.200**	−.049
5th grade	−.193***	−.117	−.140
Finland (*N*=220):			
1st grade	−.204*	−.302**	.083
2nd grade	−.088	−.091	−.074
3rd grade	−.202*	−.111	−.262*
4th grade	−.275***	−.282*	−.232
Poland (*N*=237):			
1st grade	−.112	−.153	.013
3rd grade	−.251****	−.146	−.283*

* $p<.05$. ** $p<.025$. *** $p<.01$. **** $p<.005$.

Studies measuring other types of identification besides sex role have also yielded ambiguous results for observational learning theories. In studies comparing the race of the actor and viewer, black children have sometimes been found to imitate white models more than black models (e.g., Neely et al. 1973); and in some cases children have been found to imitate adults more than peers (Nicholas et al. 1971) at least at a time long after viewing (Hicks 1965). Even with two peer actors differing greatly in likability, no difference has been found in the propensity of the viewer to imitate either of the actors (Howitt and Cumberbatch 1972). On the other hand, when subjects are asked to assume mentally the role of an actor who is aggressive, they do behave more aggressively (Turner and Berkowitz 1972). While perceived similarity of interest between the model and child can enhance the likelihood of imitation (Rosekrans 1967), the above findings suggest that a simplistic view of identification will not aid much in the understanding of observational learning. Rather, it appears that a child is most likely to imitate a model perceived to possess valued characteristics.

Along these lines, a few researchers (e.g., Huesmann et al. 1978; Rosenfeld et al. 1978; Turner and Fenn 1978; Singer and Singer 1980) recently attempted to tie observational learning more closely to theorizing in cognitive psychology. One recent idea about human memory—Tulving and Thomson's (1973) concept of encoding specificity—seems particularly relevant. Tulving argued that the likelihood of an item being recalled depends upon the specific encoding context (acquisition context) being reproduced, including even apparently irrelevant aspects. The idea that many forms of aggressive behavior are elicited by the presence of specific cues is not new (Berkowitz 1974), and there is evidence of the importance of specific cues from a violent film during testing (Geen and Berkowitz 1966; Turner and Fenn 1978; Turner and Layton 1976). Turner and Fenn (1978) analyzed a number of case studies where juveniles seem to have imitated specific criminal acts portrayed on television, e.g., the Boston incident in which a gang burned a woman to death. In each case, they found that highly specific visual cues present in the television program (e.g., a woman carrying a bright red gasoline can) were present in the environment in which the imitated behavior was emitted.

Let us consider what may be happening in information-processing terms. A child is constantly building and storing algorithms for problem solving in his or her memory. One source for the programs he or she constructs is the child's observation of problem-solving behaviors by others. A particular behavior that is observed may never be successfully encoded and stored; even if stored, it may become irretrievable. According to the encoding specificity principle, the retrievability will depend upon the extent to which the specific cues present at encoding are also present at retrieval time. But what determines whether or not an algorithm is successfully stored? Certainly, from information-processing models of memory, one would predict that the more salient a scene and the more a scene is rehearsed, the more likely it is to be stored.

While only a few researchers have moved in this direction, there are data supporting this view. In one of the earliest studies of media comprehension, Holaday and Stoddard (1933) discovered that scenes with particularly salient visual and auditory cues were more likely to be recalled. More recently, Calvert and Watkins (1979) confirmed these results. Of course, comprehension, recall, and recognition of television scenes improve with the viewer's age, but the errors young children make seem to be based on previously stored "scripts" for the situations (Newcomb and Collins 1979). Cognitive researchers have found that "scripts" (expected behavior sequences) play an important role in guiding the recall of prose (Schank and Abelson 1977; Bower et al. 1979); it is therefore not surprising that they should guide the recall of scenes viewed on television. How is a script formed? It may be based originally on what the child is told or the child's observations of his or her environment. But, eventually, television programs themselves would influence scripts. A child who repeatedly watches television characters interacting violently may store a violent script for social interaction and store algorithms for behaving aggressively in social situations.

Based on this model, Rosenfeld et al. (1978) argued that the rehearsal of specific aggressive acts observed on television through daydreaming or imaginative play could increase the probability that the aggressive acts will be performed. Indeed, in cross-cultural data, it was found that aggressive fantasies are positively correlated with aggressive behavior and in some cases with television violence viewing. This cognitive, information-processing interpretation of observational learning might also explain why violent scenes perceived as unreal are not modeled as readily (Feshbach 1976). The observer stores for later retrieval and rehearsal those scenes that have subjective utility as likely solutions to real social problems. Acts perceived as unreal would not be likely to fulfill this requirement and hence would not be stored. The child's use of aggressive fantasies to rehearse aggressive behaviors should not be confused with the child's use of imaginative play and normal daydreaming. Singer and Singer (1980) found that children who engage in more imaginative play and fantasy in general are less aggressive. One reason may be that these children have rehearsed prosocial behaviors sufficiently for them to become dominant responses.

The foregoing approach has important implications for the controversy over whether television violence disinhibits general aggressive behavior or teaches observers specific aggressive acts. The research on observational learning and cognitive processes suggests that the observed relations between violence viewing and aggressive behavior do not require a disinhibition theory. Children who observe large numbers of aggressive behaviors on television could store and subsequently retrieve and perform those behaviors, when the appropriate cues are present. Even seemingly irrelevant aspects of the scene (e.g., color) could serve as triggering cues. The recall of an aggressive behavior which provides a solution to a problem a child faces may lead to the emission of that behavior. While reinforcement of the behavior increases the likelihood that the child will emit that behavior again, it is not a prerequisite for the behavior. This argument does not mean that disinhibition of aggression cannot occur. In fact, from an information-processing view, a certain type of disinhibition is plausible and builds on the learning of specific aggressive behaviors. Disinhibition could occur when the child forms an aggressive concept on the basis of his or her observation of numerous aggressive behaviors. If the aggressive concept becomes associated with successful social problem solving, new aggressive behaviors may emerge that are unrelated to the original observed behaviors.

Attitude Change

Another way in which television violence exerts its influence on children is through the molding of children's attitudes. The more television a child watches, the more accepting is the child's attitude toward aggressive behavior (Dominick and Greenberg 1972). Equally important, the more a person watches television, the more suspicious a person is, and the greater is the person's expectancy of being involved in real violence (Gerbner and Gross 1974; 1980). Why? Again, from an information-processing standpoint, attitudes are attributions, rules, and explanations induced from observations of behavior. They serve as heuristics for future behavior. If a child's, or even an adult's, major exposure to social interaction occurs through television, the conception of social reality would quite naturally be based on such observations. The attitudes toward aggression of heavy television viewers would be more positive because they perceive aggressive behavior to be the norm. Perhaps even the perception of what is an aggressive act changes. In a current longitudinal study, Huesmann et al. (1978) have found that the more aggressive a subject is, the more aggressive he or she thinks others are. One problem with the evidence for such effects is the potential correlation of heavy violence viewing with other factors that could cause accepting attitudes toward aggression, e.g., social class and aggression in the environment. Doob and Macdonald (1979) found, for example, that the correlation between fear of victimization and violence viewing becomes insignificant when one controls for neighborhood. Despite such findings, the weight of evidence suggests that television violence can alter one's attitudes toward aggression and that one's attitudes in turn influence one's behavior.

One recent study that cleverly demonstrated the relation between television program material, viewer's attitudes, and viewer's later behaviors was performed in Georgia. Ryback and Connel (1978) examined the relative incidence of unruly behavior among white and black high school students in the weeks before, during, and after the broadcasting of *Roots*. Using a relatively objective dependent measure (number of after-school detentions), they found a significant increase for blacks during the weeks *Roots* was shown. Apparently, watching *Roots* changed the black students' attitudes about obedience. Another body of evidence has been provided by researchers investigating "desensitization" of viewers. This term, unfortunately, has been used to refer to two quite different processes—attitude change and arousal change. While a fair amount of violence viewing might be required to effect an adult's attitudes, experiments by Drabman and Thomas (1974*a*, 1974*b*; Thomas and Drabman 1975) revealed that young children's willingness to accept aggressive behavior in other children can be increased by even brief exposures to violent film scenes. Such accepting attitudes, in turn, make it more likely that the child may behave aggressively and perhaps make it more likely that the child will model aggressive acts. Meyer (1972) reported that, whenever a subject observes violent acts perceived as justified, the probability increases that the subject will act aggressively. If one wishes to use the term "disinhibition," it seems appropriate here. An attitude of acceptance toward aggression and violence can increase the likelihood of aggression and violence being displayed.

Another intriguing approach toward measuring the relation between television violence, viewer attitudes, and viewer behavior has been provided by the "mitigation" and "enhancement" studies. In these, researchers have attempted either to reduce or increase the effects of television programs on children by changing the children's attitudes. Friedrich-Cofer et al. (1979) demonstrated that the effects of prosocial television were greatly enhanced when it was coupled with other prosocial teaching. Hicks (1968) discovered that adults' comments about an aggressive scene only influenced the likelihood that a preschooler would imitate the scene so long as the adult was present, while Singer and Singer (1980) reported that a parent's presence, by itself, had no effect. On the other hand, Grusec (1973) found that with older children an adult's comments could have lasting influence.

One of the most dramatic demonstrations of how attitudes can mitigate the effect of violence viewing emerged from a current longitudinal study (Eron and Huesmann 1980*b*; Huesmann et al. 1981). After the first wave of measurements, children in the upper quartile on television-violence viewing were selected and randomly divided into two groups—the experimental and placebo groups. Over the next 2 years, the experimental children were exposed to two treatments designed to mitigate the effects of television violence. First, at the beginning of the second year, they received three sessions in small groups during which the investigators attempted to teach them how unrealistic television violence was. The children were shown brief excerpts from violent shows and took part in a highly structured discussion of how unrealistic the actors' behaviors were and how their problems could have been solved unaggressively. The placebo group was shown nonviolent educational excerpts, followed by discussion of their content. Then, at the beginning of the third year, a more formal attitude-change procedure was used with the experimental subjects. Each of the experimental subjects was asked to write a paragraph on "why TV violence is unrealistic and why viewing too much of it is bad." Over the course of two sessions, the children in the experimental group wrote the paragraph, received suggestions and rewrote it, were taped reading the paragraph, and watched a television tape of themselves and their classmates reading the paragraphs. The subjects were told that the tapes were going to be shown to the school children in Chicago. The placebo group also made a tape, but it was about "what you did last summer." Six months after this intervention, the final wave of data on all the children in the study was collected. Remarkably, the mean peer-nominated aggression score for the experimental group was now significantly lower than the score for the placebo group (see table 4). Furthermore, the regression lines for predicting aggression were different within the two groups. Violence viewing was a much more important predictor in the placebo group. Since the children were randomly assigned to each condition, it would appear that changes in the children's attitudes brought on by the intervention engendered the difference in aggressiveness.

Arousal Processes

One might designate the changes in attitudes brought about by frequent violence viewing as a cognitive desensitization to violence. Similarly, there is some evidence to indicate that a real physiological desensitization can occur. In a quasi-experimental field study (Cline et al. 1973), boys who regularly watched a heavy diet of television violence displayed less physiological arousal in response to new scenes of violence than did control subjects. While these results have apparently been difficult to replicate in the field, Thomas et al. (1977) discovered similar short-term effects in laboratory studies of GSR responses to violence. It should not be surprising that emotional and physiological responsiveness to scenes of violence habituates as other responses do.

It is more difficult to make the case that such habituation would influence the future probability of aggressive behavior. On the one hand, one could argue that arousal heightens the propensity of the person to behave aggressively and television violence increases or perpetuates arousal. Studies by Geen and O'Neal (1969), Zillmann (1971; this volume), and others demonstrate that increasing a subject's general arousal increases the probability of aggressive behavior. While more recent experiments (Baron 1977) placed limits on these results, it might follow that children who watched the least violence previously would be the most aroused by violence and the most likely to act aggressively afterward.

On the other hand, one could argue equally convincingly that the arousal fostered by television and film violence is an unpleasant consequence that serves as a negative reinforcer. In this case, the desensitized heavy violence viewers would be expected to behave more aggressively than those not desensitized. Confusion between these two processes is evident in the writings of communication researchers, some of whom argue that television is making children hyperactive by "overloading" them with stimulation (Halpern 1975), while others claim television is anesthetizing children (Winn

Table 4

Effect of the Intervention on Mean Level of Aggression Over the Course of 1 Year

	Mean Peer-Nominated Aggression (Peeragg) Before (1978)	After (1979)
Experimental Group ($N=59$)	154.0	175.3
Placebo Group ($N=58$)	158.0	242.8

Analysis of Covariance	Source	df	F	Signif.
Covariates				
	Sex	1	1.23	—
	Grade	1	0.00	—
	Peeragg 1978	1	61.12	.001
Effects				
	Group	1	6.40	.013
Error		112		
Total		116		

1977) by "overloading" them with stimulation. Still a third alternative is suggested by the recent research of Tannenbaum (1980) and Hayes et al. (1980) on the self-reinforcing properties of aggression. If we adopt the viewpoint that there is an optimal level of arousal which each individual finds most satisfying, then it follows that aggressive behavior might be used to generate appropriate levels of self-arousal. Since aggressive behavior of necessity produces heightened arousal, the desensitized violence viewer might behave more aggressively in order to achieve the desired level of arousal. Yet, once the higher level of arousal is achieved, the most likely behaviors to be emitted are those most readily retrievable from memory, i.e., the dominant responses (Zajonc 1965). If these are aggressive responses, then aggression continues. Such a model provides a role for arousal both as a precursor and consequence of aggression.

Catharsis

Catharsis means so many different things to different psychologists that it is somewhat difficult to evaluate as a model to explain the relations between television violence viewing and aggression. Certainly, aggressive actions can reduce physiological arousal in subjects who have been frustrated (Hokanson and Burgess 1962). On the other hand, no one has produced convincing evidence that a "need to aggress" accumulates over time. Furthermore, there are no data to indicate that watching violent acts reduces arousal or the propensity of one to act aggressively. In fact, the wealth of evidence demonstrating that violence viewing and aggression are positively related contradicts the catharsis hypothesis.

In the current longitudinal cross-cultural study Huesmann et al. found a different kind of evidence that argues against the catharsis model (Rosenfeld et al. 1978). Each child's frequency of aggressive fantasy was measured with a self-report inventory and found to be positively correlated with peer-rated aggressiveness. This was true for boys and girls in both Finland and the United States. While the causal direction of the relation is not yet clear, the data contradict the catharsis hypothesis. Children who fantasize about aggressive acts tend to act aggressively. These data are more in accord with the information-processing view of fantasy as "rehearsal" of behaviors.

It does not follow from our rejection of the catharsis model that a child's aggressiveness could never be reduced by exposure to television violence. The observational learning process, the attitude change process, and the arousal process might conceivably function to reduce aggressive behavior, if certain types of program material were presented. But these would not be considered catharsis processes by any fair definition of the word.

Justification Processes

The justification hypothesis posits that people who are aggressive like to watch violent television because they can then justify their own behavior as being normal. It is similar to the attitude change process, but it operates in the opposite direction. Television violence viewing does not stimulate the child's aggressiveness; it results from it. A child's own aggressive behaviors normally should elicit guilt in the child, but this guilt could be relieved if the child believed that aggression were normal. Thus, the child who has behaved aggressively watches violent television shows to justify his or her own aggressiveness.

Unfortunately very little research has been conducted to test this model. A number of psychologists have suggested that aggressiveness might be a precursor of violence viewing (e.g., Kaplan and Singer 1976), but most of them have operated in a theoretical vacuum without any process model to explain such an effect. The one recent experiment aimed at assaying whether aggressive behavior might be a precursor of violence viewing unfortunately only demonstrated that subjects who are told to think about aggressive words choose to watch aggressive films afterward (Fenigstein 1979).

The justification model is clearly one on which more research is needed. It is not necessarily antagonistic to any of the other processes discussed and could act in a complementary fashion with them to produce the observed relations between violence viewing and aggression.

Summary

The recent research concerning the relation between television violence and aggressive behavior was discussed within the framework of information-processing models of learning and memory developed in cognitive psychology. Five potential processes were considered: observational learning, attitude change, emotional and physiological arousal, catharsis, and justification processes. Violence viewing and aggressive behavior clearly are positively related, not just in our culture but in other western cultures as well. The weight of evidence strongly suggests that observational learning and attitude change induced by television violence are contributing to the positive relation. Less obvious is the role of arousal processes. Significant relations between arousal, television violence, and aggression have been found, but a compelling process model has yet to be formulated that integrates the results. Also undecided is the justification hypothesis—that aggressive people watch television violence because they can then rationalize their own actions as normal. Finally, the available data convincingly contradict the catharsis model. Not only is there no evidence that vicarious participation in aggression reduces aggressive behavior, there is some evidence that it actually increases the likelihood of aggressive acts.

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Television and Aggression: Results of a Panel Study

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This chapter[1] summarizes the results of a research project designed to determine whether continued exposure to violence on television programs causes the development of aggressive behavior patterns among elementary school and high school children. The project, sponsored and carried out by the National Broadcasting Company, surveyed some 3,200 young people over a 3-year period, from 1970 to 1973. A detailed presentation of the complete analysis—which included information obtained not only from the panels of children but also from school teachers, school records, interviews with a sample of mothers, and questionnaires from a sample of fathers—is reported elsewhere (Milavsky et al. 1982).

Background

When the study was designed, the literature on television and violence did not include any longitudinal studies. In 1972, when our data were in the midst of being collected, a two-wave panel study by Lefkowitz, Eron, Walder, and Huesmann was published as part of the Surgeon General's Report on Television and Social Behavior (Comstock and Rubinstein 1972). The Lefkowitz study documented a significant relationship between preference for violent television programs and aggression measured 10 years later. However, the Surgeon General's report regarded its findings "not conclusive" by virtue of several methodological problems with the data collected. In its recommendations for future research the report called for more longitudinal studies on the effects of television on children, emphasizing that "this gap needs to be filled before we can learn something dependable about the long-term effects of repeated exposure to standard television fare" (Surgeon General's Scientific Advisory Committee 1972, p. 114).

Basic Design and Measures

Design

The study was designed as a panel survey, covering a 3-year period (1970 through 1973). Data were obtained from approximately 2,400 elementary school children (second through sixth grades) who were surveyed up to six times and from 800 teenage boys who were surveyed up to five times. Interviews and questionnaires were administered to the respondents and samples of their parents and school teachers.

At the beginning of the study, the younger respondents ranged from 7 through 12 years of age, the older respondents from 12 through 16. Thus, over the 3-year period, our data reflect the behavior of children and adolescents ranging in age from 7 through 19.

The study was conducted in two medium-sized Midwestern cities, Minneapolis, Minnesota, and Ft. Worth, Texas. Both are located in the Central Time Zone, where prime time television programs start 1 hour earlier than in either the East or West. This allows young viewers maximum exposure to programs with violent content. Also, the cities provided many program choices, since each had four commercial and one public television station on the VHF band. Further, the cities were relatively similar in size and in many sociodemographic characteristics, but one (Ft. Worth) had a much higher violent crime rate than the other, allowing an investigation of whether the amount of violent crime actually present in the community affects television's influence.

Pretests indicated that valid and reliable measures of both television exposure and aggression could be obtained from elementary school children as young as second graders with methods we developed. Those methods included a peer-nomination technique for measuring behavior and a self-reported television exposure measure, both geared especially toward the abilities of young respondents. For teenagers, a different methodology, geared toward the characteristics of adolescent boys, was employed. These methods are described later.

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[1] Many technical details of the research project are omitted in this summary.

Sampling of Respondents. The decision to use a peer-nomination measure of aggression among elementary school children dictated that we sample our young respondents in classroom units. With the cooperation of the local school systems, about 60 classes (30 in each city) were selected. Before selection, the universe of classroom units was stratified by race and socioeconomic status to insure that the sample would include respondents with varied socioeconomic backgrounds. Less than half of all children studied in each city were from schools characterized by the school systems' research departments as "predominantly white middle-class"; the majority were from "predominantly lower-class" schools. About 20 percent of all respondents were black.

Teenagers were sampled differently. Since teens do not spend the entire school day in a single classroom but rotate among different classes with differing compositions, it was not possible to replicate the elementary school design. A probability sample of 200 teen boys was selected from school enrollment lists of the secondary schools that were fed by the elementary schools of our younger sample. This sample was stratified by grade in school and represented the same socioeconomic groups as the elementary school sample. These boys were our core respondents. To allow for the possibility of studying friendship groups, each core respondent was asked to identify his neighborhood friends who were also recruited. These neighborhood friendship groups were brought to interview sessions held at neutral locations away from home and school. The total set of boys who came to the first interview sessions in the Spring of 1970 formed our core panel sample ($N = 403$).

Attrition. The more data collection points there are, the more opportunities occur for nonresponse. Since we are dealing with a relatively long panel with five or six data collection points, the compound influences of these over the course of the study are great. In addition, in the elementary school sample, attrition was built into the design because sixth graders graduated out of the sample. Thus, the amount of attrition was considerable: to take the most extreme evidence of this, while 805 boys were in the initial Wave I sample, only 178 of them were in all six waves. The rest either graduated out of elementary school, moved to another school district, or were absent on at least one of the data collection days. However, most respondents were present in more than one wave. In addition, new respondents entered the samples after Wave I, and, therefore, 300 to 500 respondents are available for most lagged analyses over short-time intervals and 200-300 for most analyses covering time intervals between 1 and 2 years. These sample sizes are more than large enough for parametric analysis.

The effect of data loss on panel composition can be ascertained by comparing measured characteristics of those who left with those who stayed. In our data, those for whom there were incomplete data tended to be more aggressive, to have below average school grades, and to come from one-parent families. Although more high-aggression than low-aggression respondents were lost by attrition, a comparison of the cross-sectional distributions shows that there is still a good amount of variation in the aggression of respondents present in all waves. Furthermore, subgroup analyses reported more fully below show that the structural relationship between television and aggression does not systematically differ in subgroups of respondents defined in terms of characteristics associated with attrition.

Other, more direct information on this issue is also available. Most respondents who left the study did so after having participated in at least two data collection waves. We found that the basic television-aggression relationship among boys before they left the sample was not different from the relationship obtained among boys who stayed in the study.

Together these two sets of findings indicate that data loss due to attrition did not distort the basic television-aggression relationship.

Aggression Measures

The study focused on purposive aggression, physical or verbal acts intended or known in advance to cause injury to others, rather than on rough play or accidents that might have injury as an unintended or unforeseen consequence. After pretesting a variety of different measures of aggression so defined, it was decided that a peer-nomination measure would be most appropriate for the elementary school sample and a self-report measure for the teenage sample.

Aggression Measures for Children. The measure used for elementary school children was adapted from a peer-nomination technique developed by Eron and Walder (Walder et al. 1961; Eron et al. 1971). Questionnaires contained at least four aggression items in each wave. Two of these concern acts of physical aggression (trying to hurt by pushing and shoving; by hitting and punching) and two, verbal aggression (trying to hurt others by saying mean things; lying to get someone in trouble). Beginning in Wave III, two items tapping more serious antisocial acts were added (stealing and damaging property).

In addition, each wave contained four prosocial behavior items (e.g., Who helps others?) and various questions about sociometric choice (e.g., Who do you spend time with at lunch or recess?). In all, between 17 and 24 peer-nomination questions were asked in each wave.

The question responses were factor analyzed separately in each wave. In Waves I and II, all four aggression items, and in Waves II and subsequently all six of them, formed one factor that was empirically distinct from both prosocial and sociometric nominations. The four items available in each wave were combined into a scale (pushing and shoving, hitting and punching, trying to hurt others by saying mean things, lying to get someone into trouble). Since each item ranged from 0 to 100, the highest possible score was 400, indicating that a child was nominated as aggressive on all four questions by all classmates. (None of the children actually received a score this high; the highest was 383.)

Figure 1 shows the distribution of the aggression scale for boys and for girls. (The example given is Wave IV; distributions in other waves are very similar.) Both distributions are clearly J-shaped, which is typical of deviant behavior. Girls score considerably lower than boys: The mean aggression score for boys is 95 (median: 77), with a standard deviation of 77. For girls the mean is 53 (median: 37), with a standard deviation of 52.

The reliabilities of the aggression scale, estimated separately in the six waves using the Heise and Bohrnstedt (1970) method, are at least .93 for boys and .88 for girls. The stability of aggression, measured by the correlations between aggression at earlier and later time points, ranges from .84 in the shortest (3-month) time span to .54 in the longest (3 years). Adjusting for unreliability increases these stability estimates slightly, to .88 in the shortest and .57 in the longest lags. The size of these correlations shows that aggression is a fairly stable characteristic of the children studied. But there is some change, and this provides the possibility for investigating television's impact on aggression.

The validity of the aggression measure was assessed in several ways. We replicated the Eron and Walder findings that boys receive higher scores than girls, that aggression scores form a J-shaped curve, and that peer ratings correlate well with teacher ratings and moderately with reports by the child's mother. In addition, we found that practically all children about whom teachers had written comments relating to antisocial behavior into school records scored above the median on this aggression measure, most in the top sextile. Further, we investigated possible sources of errors (such as the ordering of names in nomination lists, absenteeism, number of raters in the class, and sex of the raters) and found that they did not influence the aggression score in a significant way.

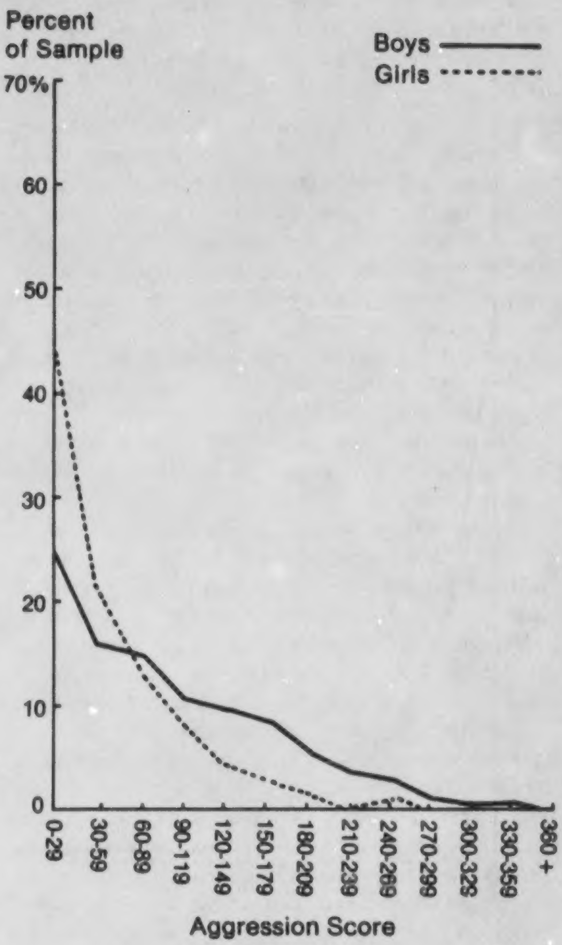

Figure 1: Distribution of Aggression Measure for Boys and Girls (Wave IV).

Aggression Measures for Teens. Consistent with prior research on teenage delinquency (Hirschi 1969), our pretests indicated that teenagers' self-reports of aggression are more accurate than informant reports. So, in our teen questionnaire, we asked respondents a battery of questions about their involvement in various types of aggressive activities. On the basis of exploratory factor analyses, four distinct clusters of aggression were uncovered in each of the five waves[2]: (1) *personal aggression*, similar in content to our aggression measure for

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[2] Principal axis solutions were estimated for 13-variable matrices separately at each point in time. Solutions were found to be in four dimensions at each time point, where we arbitrarily used a cutoff of factors that had eigenvalues equal to or greater than 1.0. Solutions were rotated both orthogonally and obliquely. Similar substantive clustering of the individual aggression items was found in both rotation approaches.

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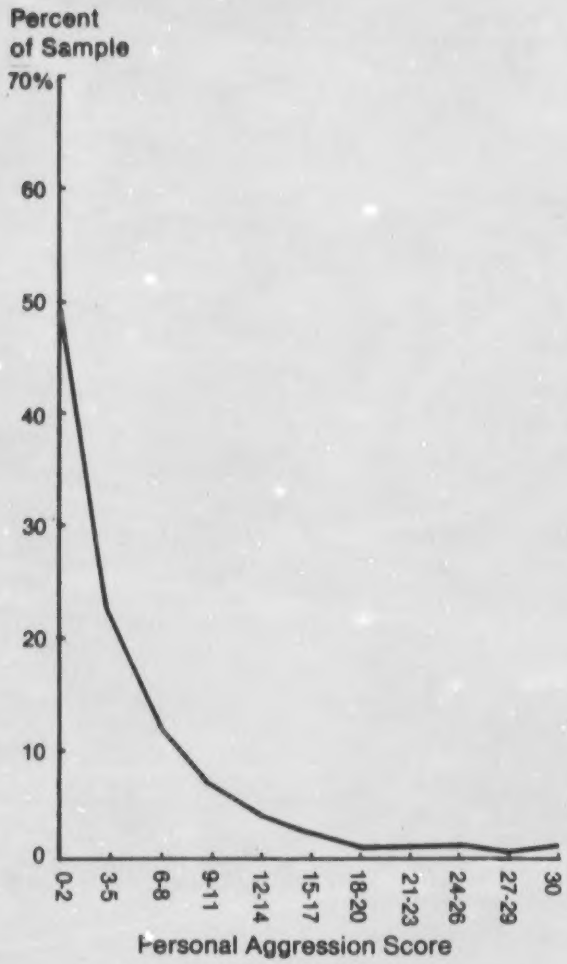

Figure 2a. Distribution of aggression measures for teens (wave III).

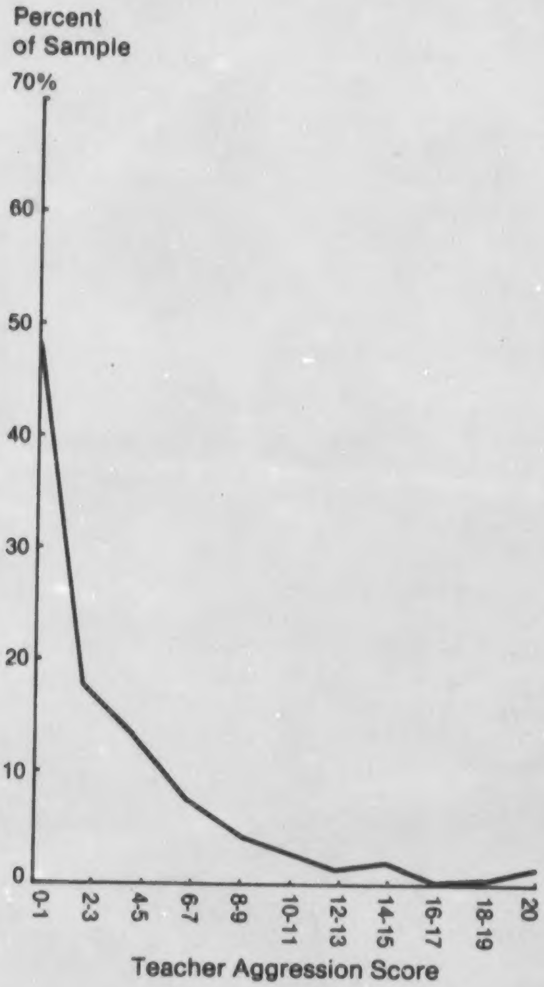

Figure 2b. Distribution of aggression measures for teens (wave III).

elementary school children; (2) *aggression against a teacher*, a measure of unruliness or rudeness toward the teacher; (3) *property aggression*, a measure of theft and vandalism; and (4) *delinquency aggression*. This last measure is of special importance since it measures serious or criminal behaviors, such as involvement in a knife fight, a mugging, car theft, or gang fight. All our teen analyses treated the four dimensions separately.

Scales of personal, teacher, and property aggression were created by adding up scores on the individual items. These measure the frequency with which a respondent engaged in each aggressive act (from 0 to 10 times during the month preceding the data collection). The measure of delinquency used in the analyses is a dichotomy because of the rarity of these kinds of behavior among average teenage boys.

The distributions of the first three aggression scales (personal, teacher, and property) are shown in figures 2*a*, 2*b*, and 2*c*. (Wave III data, collected at the same time as the children's Wave IV data in May 1971, are reported. Results were similar in other waves.) The distributions are J-shaped, just as those of the elementary school respondents' aggression scores.

The means of the personal aggression scale range from 2.6 to 4.0 in the five waves (medians: 1.2 to 2.4), while standard deviations range from 3.9 to 5.0. The reliability of the scale, computed by the Heise and Bohrnstedt method, ranges from .70 to .75. The means of the teacher aggression measure range from 2.2 to 3.3 (median: .7 to 1.7), the standard deviations range from 3.7 to 4.2, the reliabilities from .43 to .52. Finally, the means of the property aggression measure are between 1.4 and 2.0)

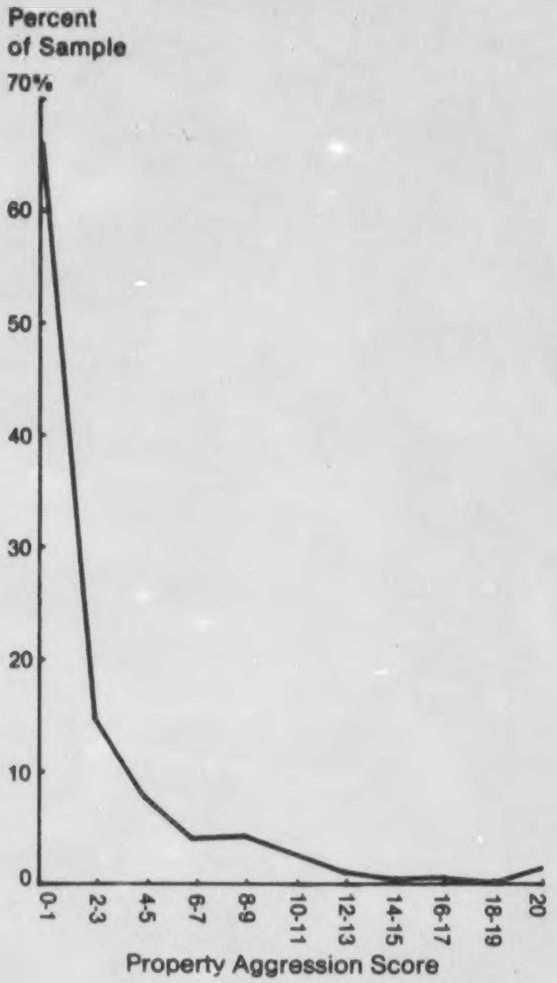

Figure 2c. Distribution of aggression measures for teens (wave III).

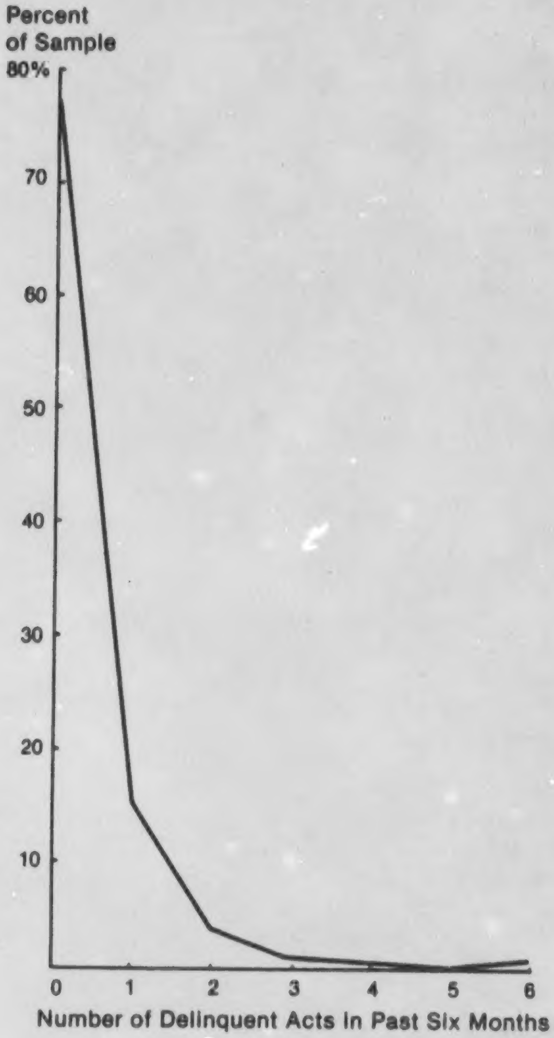

Figure 3. Distribution of delinquency aggression items for teens (wave III).

(medians: .3 to .5), with standard deviations from 2.9 to 3.5 and reliabilities ranging from .60 to .68.

The stabilities of these three aggression scales vary considerably. Personal aggression is the least stable, with autocorrelations from .27 over 3 months to .49 over 3 years (from .38 to .69 when corrected for measurement error). Teacher aggression is next most stable, varying from .23 to .60 (from .35 to .91 when corrected for measurement error). The most stable of the three is the property aggression scale, with stabilities between .18 over 3 years and .54 over 3 months. When adjusted for measurement error, the stabilities range from .41 over 3 years to an estimated stability of 1.0—no change at all—over 3 months.

Figure 3 shows the distribution of delinquent acts reported in Wave III. The score indicates how many of six acts the respondent reported having committed during the last 6 months. (The acts are: involvement in knife fight, mugging, car theft, gang fight, arrest, and being beaten up.) Delinquent behaviors are much less frequent than other kinds of antisocial behavior: In Wave III, 15 percent of the boys reported having done one of the six acts and 9 percent reported more than one act; in other waves, these percentages were slightly smaller.

As in the case of the aggression measure for children, we conducted various tests to assess the validity of the reports. We found the distribution of the scores to have the expected J-shape. We also found that the less serious behaviors tapped in the personal and teacher aggression scales were more frequently reported than the more serious acts of property aggression. (Delinquent acts were reported with least frequency.) There are associations between scale scores and doing poorly in school, receiving low "citizenship" grades, and aggressiveness being reported by teachers in school records. Further, teen self-reports and their mother-reports correlated about .3. Finally, indirect validity evidence comes from the fact that the measures covary in theoretically predictable ways and in ways found in other research with characteristics of the boys, their parents, and other aspects of their environment.

Television Exposure Measures

The measure of television exposure consisted of questions keyed to an extensive program checklist developed on the basis of pretests in which the respondent was asked to indicate the frequency of viewing of a large sample of specific programs. About 45 television programs and movies were selected for children and 55–60 for teens. In Wave I, the samples were drawn randomly to be representative of all kinds of programs from all television stations in the area, but with a high proportion of violent ones. Samples in the two study cities were matched. Thereafter, the program selection was made purposively, to facilitate accurate comparisons across cities and waves. Raw exposure scores were computed by multiplying frequency reports by the length of the program and then summing the viewing-time scores across the programs. The resultant scores were rounded and then divided by 10. These scores represent the "total exposure" measure. A measure of "violent television exposure" was computed by weighting the raw exposure scores with previously published data on adults' perceptions of the amount of violence contained in various programs (Greenberg and Gordon 1972).

Since the recall required of our respondents in reporting television exposure introduced the possibility of unreliable responses, we built in a number of internal checks on the consistency and plausibility of reports. (For example, each checklist contained a "dummy" item, the title of a nonexistent program.) We found a number of younger respondents, but only a few older ones and hardly any teens, who gave viewing reports that were implausible when assessed in this way. All critical analyses of elementary school children data were done twice, once with samples consisting of all respondents and then again with only the more valid reporters. (Teen data are based on total samples.) The replications showed that the inclusion of the "less valid reporters" did not affect the results of the children's over-time data in a significant or systematic way, but it did inflate the size of cross-sectional correlations.

Figures 4a and 4b show the distributions of the violent exposure measures for boys, girls, and teens. The distributions are quite similar for elementary school girls and teens but are skewed toward higher levels of viewing for elementary school boys, a result consistent with data collected by commercial rating services. In the waves shown, the mean violent television score for boys is 45, for girls 41, and for teens 36 (medians are 43, 36, and 30, respectively). Standard deviations are 27 for boys, 26 for girls, 25 for teens.

The reliability of the violent exposure measure based on the Werts and Linn (1975) method averages .68 and ranges from .60 to .77 in the six waves for boys. Reliability for girls averages .72 and ranges from .60 to .81. For teens, it ranges from .56 to .57.

Evidence for the validity of the exposure data of the valid reporters is provided primarily through television ratings data. In our data, for example, means for girls' total exposure are about the same as those for boys, but

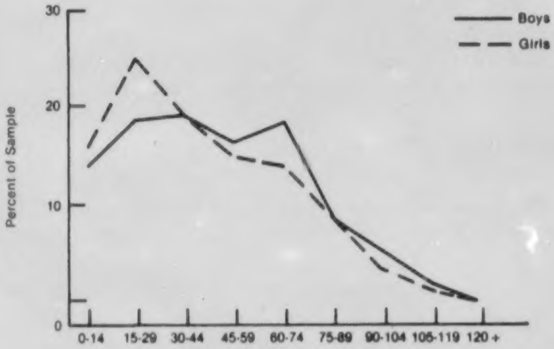

Figure 4a. Violent exposure scores for boys and girls (wave IV).

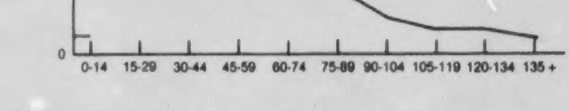

Figure 4b. Violent exposure scores for teens (wave III).

girls score lower on violent exposure. This agrees with television ratings indicating that girls are less likely to view "violent" programs. Teen scores reflect the fact that adolescents' viewing levels are lower than those of younger children. Reported viewing levels among all samples were higher in the fall and winter than in the spring; this too agrees with ratings. Finally, viewing reports for individual programs also agree with television ratings of these programs.

The Analysis Approach

Cross-Sectional Correlations

Since this study was designed, several sample surveys of the relationship between television viewing and aggression have been reported (Comstock 1978). Most of these found positive associations between measures of aggression and exposure to television violence obtained at the same point in time. Our study is no exception. Among elementary school boys, cross-sectional correlations between violent television exposure and aggression range from .08 to .17 and average .11 across the six waves. Correlations for girls are higher, ranging from .15 to .34 with an average of .23. All coefficients for boys and girls are significant at the .05 level.[3] In the teens sample, the average correlations for teacher, property, and delinquency aggression are very small: .06, .03, and .03, respectively. They are higher for the relationship of television exposure to personal aggression, with an average of .13 across the five waves.[4]

It is difficult to make any detailed comparison of these correlations with those reported in previous cross-sectional research, since the measures of television viewing and indicators of aggression used in those studies vary considerably from those used here.[5] The study by McLeod et al. (1972) of high school boys is most directly comparable to our teenage data in that it employed a television exposure score very similar to the one we use here. The correlation between this measure and a scale of "aggressive behavioral delinquency" (consisting of three items: "Been in fights with several people on each side"; "Hurt someone on purpose to get back for something they had done to you"; "Got into a serious fight with another student at school.") was .08 for a sample of Maryland junior high school boys, .23 for senior high boys, and .12 for Wisconsin senior high schoolers. These correlations are roughly similar to those found in the present study between television exposure and personal aggression (the most similar type of aggression we studied to the items contained in their scale).

Showing that two measures are related, however, says very little about causal connections between them. The point-in-time correlations above could result from an effect of earlier television exposure on later aggression, from an effect of aggressiveness on preference for violent television programs, or from third factors influencing both behaviors. In fact, all three of these sorts of influences could be at work simultaneously.

There is some evidence that these correlations are at least partly spurious. When third variables causally antecedent to both television exposure and aggression were controlled, the cross-sectional correlations dropped, often to statistically insignificant levels. For example, among boys when controls for socioeconomic status of the family (as measured by family income, father's/mother's occupation and education) and race were introduced, five of the six coefficients became insignificant and the average of the coefficients dropped from .11 to .06.[6]

Such analyses, however, fail to take advantage of the principal feature of our research design: that it provides observations at multiple points in time. Accordingly, the hypothesized causal influence of television exposure on antisocial behavior was studied with models which are more powerful than cross-sectional models and take advantage of this over-time feature.

The Analysis Model

Our design model is known technically as a "quasi-experiment" (Cook and Campbell 1979). This means our design approximates an experiment in that it uses over-time data to study the relationship between television exposure and later aggression and, at the same time, statistically controls for the initial relationship between television exposure and aggression.

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[3] These correlations are for samples of "valid reporters." When total samples, including "less valid reporters" of their television exposure, are examined, all correlations are higher, averaging .17 for boys, .30 for girls.

[4] Personal aggression: range .07 to .16, four significant coefficients; teacher aggression −.06 to .12, four significant; property aggression .03 to .04, none significant; delinquency −.02 to .11, one significant.

[5] For example, even though Lefkowitz et al. (1972) used an aggression measure very similar to ours for their third grade sample, their television measure was completely different (not an exposure, but a favorite show measure).

[6] McLeod et al. (1972) did not find that controls for SES and race reduced the cross-sectional correlations between television and aggression substantially. The reason could well be that there is little variation in the socioeconomic status of their respondents. Their Wisconsin sample, for example, was all white and the researchers describe their Maryland sample as "atypical in being somewhat higher than average on various measures of socioeconomic status" (1972, 1974). In contrast, our sample was selected in such a way that considerable variation in socioeconomic status was guaranteed. We have both lower class blacks and affluent professional families. For example, 12 percent of our boys have fathers who did not go to school beyond the eighth grade, 19 percent have fathers who graduated from college.

The basic model of this approach, expressed here in linear terms, is this equation for respondent i:

$$A_{t_i} = a + b_1 A_{(t-1)_i} + b_2 TV_{(t-1)_i} + u_i \qquad \text{(Equation 1)}$$

In the equation, the lagged influences of violent television exposure (TV) and aggression (A) at time t-1 are studied, with the individual's prediction error indicated by u_i. The outcome of interest is aggression measured at time t.

Note that the lagged aggression measure, $A_{(t-1)}$, is included as a predictor along with the lagged exposure measure, $TV_{(t-1)}$. As a result, this model effectively rules out any influence on the television effect caused by the initial correlation between earlier television and aggression and, hence, also the influences of the causal forces that created that initial correlation. This model also rules out any self-selection of previously aggressive children into viewing of violent television programs as a cause of the television-aggression association, since any such effect will be part of the initial correlation and thus controlled out. In the absence of any other causes of aggression that are related to $\text{television}_{(t-1)}$, the coefficient b_2 thus yields an unbiased estimate of television's lagged causal influence on aggression.

This analysis approach reduces considerably the ambiguity about the possible causal role of television exposure on aggression. Still, it is not perfect: Just as in cross-sectional surveys, unmeasured common causes of violent television exposure and aggression can spuriously affect results. Since we control earlier aggression in our time-lagged model, these variables form a more restricted class than in cross-sectional surveys: Unmeasured factors can show earlier television to be related spuriously to later aggression only if they relate to the earlier *level* of television exposure and affect *change* in aggression over the interval of the panel.

The problem of causal misspecification cannot be entirely removed without direct manipulation of the presumed causal variable. As a consequence, in the analysis we have been attentive to the possibility that our results are influenced by unmeasured common causes of television viewing and subsequent aggression. We will return to this point below.

We worked with simple two-wave models as well as with more complex multi-wave models. Some of the models were linear, like that described above; others were nonlinear. These variations on the basic strategy and the reasons for selecting a particular strategy are discussed below as they arise.

Alternate Analysis Approaches

Several other approaches to over-time analysis were considered but rejected. Recent work on the analysis of categorical data over time has led to important advances in modified regression analysis (Goodman 1973). We did not use this type of approach because we chose to use interval scale techniques, which enable the analysis to detect smaller associations than those of an analysis using categorical methods.

Of the methods available for the analysis of interval-level data, time-series analysis is inapplicable because it requires a sample of many more time points than one could reasonably collect in a survey of this sort. We also did not use a pooled time series cross-section approach because we have unequal time intervals between the various waves of the panel.

Finally, we did not use the cross-lagged panel correlation approach which has been used by a number of investigators to explore possible influences of television exposure on aggression, including Lefkowitz et al. (1972) in their above-mentioned longitudinal study. This approach is symmetric, i.e., it includes both variables at two points in time and attempts to determine which of two assumed causal influences is relatively stronger. Our problem, though, is to determine whether television exposure causes aggression irrespective of any reciprocal effect of aggression on exposure.

But, more importantly, it is now widely known that the cross-lagged approach cannot be used to make inferences about causal connections between a pair of presumably causally connected variables (Bohrnstedt 1969; Duncan 1969, 1972; Cook and Campbell 1979; Rogosa 1980). It is not clear to what extent cross-lagged differences reflect causal connections or merely differences in the stabilities of the measures. (The less stable variable of the pair, in this case television exposure, has a greater chance of showing a significant lagged association than the more stable variable of the pair, in this case aggression.) There is no way of adequately resolving this ambiguity within a cross-lagged panel correlation framework (Kessler and Greenberg 1981).

Findings for Elementary School Children

Basic Model

We used the two-wave causal model described above to study the elementary school children. It would have been desirable to apply the model across all six study waves simultaneously and thus examine all logically possible independent ways through which earlier television exposure can affect later aggression. However, the number of respondents present in all waves is not sufficient for this approach. The number of children is considerably larger in individual pairs of waves, and, therefore, we analyzed the causal process separately in each wave pair.

The six waves generate 15 wave pairs, ranging in elapsed time from 3 months to 3 years. Sample sizes are largest in the short lags (over 400 boys and as many girls), smallest in the long lags (between 100 and 200 of each sex).

It is important to note that the 15 wave pairs are not all independent of each other. There are only five wave pairs in which the beginning and the end time points of the lags do not overlap with other panels (wave pairs I–II, II–III, III–IV, IV–V),[7] the other 10 overlap.[8] Since aggression scores at different time points are autocorrelated as high as .8, findings obtained in overlapping lags are, to a large extent, replications of the same finding rather than independent information. To make full use of the available data, including the various time points and time lags, we decided to use the following analysis strategy. First, the two-wave model in Equation 1 was estimated for all 15 lags. Then, the estimation was made again for the 10 overlapping lags, using a model that controls for all intervening television measures.[9]

In this model, the major part of the overlap is removed, and, consequently, the 15 television-effect coefficients are much more independent than in the first model. On the other hand, the first model uses somewhat larger sample sizes and has more stable parameter estimates than the model that controls for intervening television variables.[10] Therefore, we draw our conclusions based on the findings in both models.

There is no rigorous way to determine the significance of an overall analysis of 15 wave pairs that partially overlap and have changing sample compositions as these do. We set up a decision criterion for interpreting results based on the following considerations. Even if no causal connections were present and the waves were completely independent, the probability of all 15 coefficients being insignificant at the .05 level would be only 46 percent. Thirty-seven percent of the time, exactly one of the coefficients would attain this level of significance; and 14 percent of the time, exactly two would be significant. The probability of three or more coefficients being significant is 4 percent (100 percent − 46 percent − 37 percent − 13 percent). When wave pairs overlap as they do in our data, the independence conditions do not obtain, and the probability of finding three or more coefficients significant increases in a way that cannot be estimated. Nevertheless, it is clear that, even if independence applies, two coefficients could easily reach statistical significance on the basis of chance alone. And if independence does not apply, even more could be significant by chance. We therefore decided to take seriously only patterns in which three or more coefficients were significant.[11]

Findings From the Basic Model

The 15 wave-pair models are presented separately for elementary school boys and girls in tables 1 and 2. Part a of each table shows results for the models that do not control for intervening television exposure; part b shows those that introduce this control for nonadjacent wave pairs.

Our discussion of these tables focuses on the standardized regression coefficients (beta) of television predicting aggression shown in columns (4) and (10). Among boys, the 15 coefficients in table 1a range from .121 to −.026 and average .044; 12 are positive. Two positive coefficients are statistically significant, which is possible by chance. In the five adjacent lags in table 1a, coefficients range from .063 to −.026 and average .021.

In table 1b, we present the model that adjusts for the overlap between lags by controlling for intervening television measures.[12] This adjustment shortens the range of the coefficients and reduces their mean somewhat. In this model, one of the positive coefficients (III–IV lag) is significant—a result that is well within the bounds of chance.[13]

Findings for girls are quite similar. Standardized partial regression coefficients for television in table 2a range from .157 to −.037 and average .042. (The range in the

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[7] For example, the I–IV wave pair is the one in which Wave I is the earlier and Wave IV the later time point.

[8] The Wave III–IV lag, for example, is contained within the II–IV lag.

[9] Again an example: The I–IV lag in this model estimates the influence of television time I on aggression at time IV, controlling television at times II and III.

[10] In the second model, there is a potential for multicollinearity between the multiple television exposure measures which can affect the stability of the television coefficients.

[11] Of course, the consistency in the sign of the coefficients is also important. When significant coefficients do not have the same sign, the pattern—although significant in a statistical sense—is causally ambiguous. As shown below, this consideration applies to our analysis of the girls data.

[12] Control for intervening television variables does not affect the adjacent lags, only the 10 overlapping lags. To signify this, the adjacent lags are not shown again in part b of the tables.

[13] When the total sample, including "less valid reporters" controlling for intervening television is analyzed, the standardized television effect coefficients average .045; two are significant.

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Table 1

Basic Model Regression Coefficients for Boys**

		1a. *Without Controls for Intervening TV Variables*						1b. *With Controls for Intervening TV Variables*					
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Earlier Aggression Coefficients		Earlier Violent Television Exposure Coefficients		Total		Earlier Aggression Coefficients		Earlier Violent Television Exposure Coefficients		Total	
Wave Pair	Duration	b	beta	b	beta	R^2	(n)	b	beta	b	beta	R^2	(n)
III–IV	3 mos.	.921*	.857	.167*	.063	.748	(497)	–	–	–	–	–	–
II–III	4 mos.	.852*	.844	.091	.038	.719	(413)	–	–	–	–	–	–
I–II	5 mos.	.713*	.686	−.070	−.026	.467	(364)	–	–	–	–	–	–
II–IV.......	7 mos.	.844*	.771	.244*	.094	.615	(409)	.843*	.770	.178	.069	.616	(316)
I–III	9 mos.	.710*	.671	−.016	−.006	.450	(356)	.707*	.669	−.046	−.017	.450	(282)
I–IV	1 yr.	.699*	.632	.065	.023	.403	(349)	.693*	.627	−.009	−.003	.407	(249)
IV–V	1 yr.	.723*	.734	−.070	−.026	.533	(301)	–	–	–	–	–	–
V–VI	1 yr.	.688*	.723	.154	.058	.533	(188)	–	–	–	–	–	–
III–V.......	1 yr/3 mos.	.727*	.734	.016	.007	.541	(291)	.730*	.737	.102	.042	.543	(214)
II–V	1 yr/7 mos.	.737*	.665	.038	.016	.446	(240)	.737*	.665	.104	.043	.448	(187)
I–IV	2 yrs.	.685*	.594	.176	.067	.369	(211)	.680*	.590	.143	.055	.375	(155)
IV–VI......	2 yrs.	.673*	.708	.125	.049	.519	(161)	.618*	.689	.156	.064	.500	(131)
III–VI	2 yrs/3 mos.	.620*	.642	.281	.121	.460	(147)	.618*	.639	.238	.105	.465	(108)
II–VI.......	2 yrs/7 mos.	.765*	.677	.152	.065	.476	(121)	.759*	.672	−.233	−.101	.510	(89)
I–VI	3 yrs.	.644*	.543	.306	.113	.315	(112)	.653*	.551	.118	.045	.341	(70)

* Coefficients approach or exceed twice their standard errors.

** "b" refers to *metric* partial regression coefficients; "beta" refers to *standardized* partial regression coefficients.

adjacent lags is .101 to −.037, the average .063.) Ten of the 15 coefficients are positive, and three are significant. However, the three significant coefficients are in overlapping lags (II–IV, III–IV, and II–VI).

When we control for the overlap, in table 2b, the results change to three positive and one negative significant coefficients. This pattern is inconsistent and thus has equivocal meaning for a causal interpretation. Further analyses, reported in more detail below, suggested that the pattern is spurious. When we controlled for common causes of television and aggression, the number of positive significant coefficients reduced from three to one.[14] It is conceivable that imprecisions in the variables measured or the model employed are responsible for the lack of consistently significant associations in these data. To examine this, we investigated the possibility that nonlinearities or nonadditivities exist in the television-aggression relationship. We also estimated complex measurement models, using the reliability estimates for television exposure reported above as our basis for adjusting errors in that measure and using the four separate indicators in the aggression scale over the two waves in a pair to estimate the reliability of aggression. The possibility of autocorrelated errors in the aggression indicators was also studied. All these procedures failed to uncover any more substantial relationships than those reported above.

Subgroups

The most persuasive theoretical arguments for a socialization effect of violent television exposure on subsequent aggression postulate that this influence will appear most strongly among children who are predisposed or who are in situations that facilitate television effects. If this is so, we would expect to find consistent and significant relationships between television and aggression only in designated groups of respondents (Klapper 1960; Comstock and Rubinstein 1972, Vol. V, pp. 7, 11, 75; Liebert and Schwartzberg 1977).

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[14] Analyses controlling for intervening television for total samples of girls (including "less valid reporters") produce standardized television effect coefficients averaging .039 in the 15 lags; three positive coefficients are significant. This meets our criterion but is of dubious value because it includes the less valid reporters of television.

Measures were obtained to tap the sorts of factors that might play a role in the television-aggression relationship. Our analysis focused on characteristics that predispose the child to act aggressively (such as a history of aggressiveness, having aggressive friends, use of and support for aggression by mother and father, emotional problems, low school grades, single-parent home, low economic status). We also examined a few characteristics which facilitate aggressive behavior (such as lack of supervision). The sample of boys was divided on the basis of 43 different variables of this sort, one at a time. Most of these were dichotomous, some polytomous, resulting in a total of 95 overlapping subgroups. Fewer data were collected for girls; still, we were able to form 46 groups based on 20 classifications.

The results of this subgroup analysis are somewhat tentative because the number of cases available for analysis in many subgroups was quite small. In fact, in some subgroups not all 15 wave pairs could be analyzed because not enough cases were available. (We used *n* = 30 as a cutoff point for making this decision.)

The basic 15 lag models were estimated in each of these subgroups, resulting in 1,228 separate regression equations for boys and 600 for girls. Given so many replications, the criterion established for statistical significance in the basic analysis (3 or more out of 15 wave pairs) could be reached by chance in some of these groups. In fact, the criterion was reached in a few subgroups. However, an overall assessment showed that the number of significant coefficients in these few subgroups agrees with the numbers one would expect to occur by chance alone. This was true among boys and girls.[15]

An examination of the specific groups where significant television-effect coefficients were found supports the interpretation that chance is the best explanation for the criterion having been reached in a few subgroups. There are a total of five such groups:[16] boys not noted as shy by their teachers; those who help others; those who find movies about real-life violence disgusting; boys who are not good at "make-believe play" (according to teacher, but not according to peer ratings); and those who attend few violent theater movies. These findings for groups are inconsistent with theoretical assumptions about predisposing and facilitating conditions. Indeed, of these five groups, only one could be regarded as "predisposed" (not shy), one is unclear ("make-believe play"),[17] and the remaining three are not predisposed and, in fact, contradict any theoretical expectations. No significant associations were found among virtually all groups who could be considered predisposed, such as boys from one-parent homes and poor students.

Results among elementary school girls were also inconsistent. Significant associations appeared among six subgroups of girls. Some of these could be considered predisposed: those rated by teachers as "not shy" and those high in exposure to violence in comic books and theater movies. Two of these groups are unclear: those not good at make-believe play (according to peers, but not teacher ratings) and those living in Fort Worth. Finally, one group, those extremely low in prior aggression, clearly contradicts theory.

Other Conceptualizations of Television Exposure

It was not possible to create a measure of violent television exposure based on objective measures of the amount of violence in television programs. In fact, it would be next to impossible to find a noncontroversial definition of "television violence" on which to base such a count. Therefore, we repeated the basic model analyses with a number of different exposure measures, each emphasizing a somewhat different conceptualization of television violence, and used them to predict aggression.

The alternatives we created included a measure that indicated the amount of television watched unweighted for violence. We also examined a scale of the proportion of total viewing devoted to programs with violence, irrespective of the total amount viewed. Measures with alternative violence weighting schemes, measures based on

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[15] This overall assessment was conducted in the following way. We focused on the adjacent wave pairs (five in each subgroup) in the 95 groups of boys. These lags allow an unambiguous interpretation of the findings, since they are not affected by the overlap of the other wave pairs.

There are 475 (5 × 95) coefficients in these lags for elementary school boys. We generated a model to predict the distribution of the number of significant coefficients in each set of five lags which would occur if these 475 coefficients were separated into 95 random groupings. This chance distribution closely corresponded to the distribution of the number of significant coefficients actually observed over all the groups studied.

Among boys, on the basis of chance expectations, distributing an average of 9 percent significant coefficients (the percent we actually obtained over 1,228 separate regression equations) across 95 subgroups, we would expect no significant coefficients in 64 percent of these, one in 30 percent, two in 6 percent, and more than two in 1 percent of the adjacent lags in these 95 subgroups. The actual distribution is very close to this: no significant coefficient in 61 percent of the groups, one in 35 percent and two in 4 percent. No subgroup has as many as three significant coefficients.

[16] A previous paper (Milavsky 1977) reported these findings for boys.

[17] J. L. Singer (1971) suggested that children with a poor fantasy life are more predisposed to act aggressively than children who cannot act out their aggressions in their imaginations. However, we found those nominated as engaging in "make-believe play" (by their peers or teachers) to be more aggressive than those who are not.

Table 2

Basic Model Regression Coefficients for Girls**

		2a. *Without Controls for Intervening TV Variables*						2b. *With Controls for Intervening TV Variables*					
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Earlier Aggression Coefficients		Earlier Violent Television Exposure Coefficients		Total		Earlier Aggression Coefficients		Earlier Violent Television Exposure Coefficients		Total	
Wave Pair	Duration	b	beta	b	beta	R^2	(n)	b	beta	b	beta	R^2	(n)
III–IV	3 mos.	.891*	.784	.138*	.081	.654	(491)	–	–	–	–	–	–
II–III	4 mos.	.754*	.762	.082	.060	.607	(426)	–	–	–	–	–	–
I–II	5 mos.	.616*	.676	−.062	−.037	.441	(391)	–	–	–	–	–	–
II–IV	7 mos.	.766*	.662	.168*	.105	.486	(408)	.767*	.663	.176*	.111	.486	(317)
I–III	9 mos.	.555*	.634	−.008	−.005	.400	(384)	.541*	.619	−.173*	−.105	.422	(321)
I–IV	1 yr.	.612*	.636	.036	.020	.413	(369)	.601*	.624	−.121	−.067	.429	(281)
IV–V	1 yr.	.504*	.501	.120	.062	.270	(296)	–	–	–	–	–	–
V–VI	1 yr.	.499*	.585	.153	.101	.365	(153)	–	–	–	–	–	–
III–V.......	1 yr/3 mos.	.694*	.614	−.043	−.028	.369	(292)	.694*	.614	−.043	−.028	.369	(208)
II–V	1 yr/7 mos.	.672*	.602	.005	.004	.363	(245)	.542*	.486	.114	.082	.402	(196)
I–V........	2 yrs.	.437*	.484	.103	.062	.259	(236)	.430*	.475	.025	.015	.263	(174)
IV–VI......	2 yrs.	.573*	.679	−.017	−.011	.458	(134)	.375*	.444	−.052	−.034	.493	(97)
III–VI	2 yrs/3 mos.	.659*	.616	.135	.094	.425	(133)	.684*	.640	.335*	.235	.447	(94)
II–VI.......	2 yrs/7 mos.	.622*	.606	.215*	.157	.433	(123)	.609*	.594	.125	.091	.471	(87)
I–VI	3 yrs.	.541*	.596	−.049	−.029	.346	(113)	.515*	.568	−.130	−.076	.360	(75)

* Coefficients closely approach or exceed twice their standard errors.

** "b" refers to *metric* partial regression coefficients; "beta" refers to *standardized* partial regression coefficients.

empirical viewing patterns (derived from factor analyses), a violence rating for the child's three "favorite" programs (the primary television exposure measure employed in the single other longitudinal study by Lefkowitz et al.), and measures based on accumulated viewing of violent television over the whole period of the study were also created. Each of these alternative conceptualizations was used to replicate the basic regression analyses reported in tables 1a and 2a. None of these television exposure scores was a significant predictor of aggression.

Findings for Teenage Boys

As reported above, four distinct clusters of aggressive behaviors could be detected among the teens. Three of these—personal aggression, aggression against teachers, and property aggression—consist of relatively common behaviors and are discussed first. Subsequently we will discuss delinquency. Since this is a rare kind of behavior in our sample, it was studied separately.

Personal, Teacher, and Property Aggression

The same general linear regression approach used in the analysis of the elementary school sample was used again among teens. However, the teen sample was large enough to enable us to work with four- and five-wave models. Those models use more of the data simultaneously than wave pair models and thus eliminate the problem of interpreting findings from overlapping lags which we encountered in the elementary school analysis.

Separate five-, four-, and two-wave models were estimated for each aggression scale. No overlap of cases existed in these three sets of models, since they represent respondents who entered the panel for the first time in Waves I, II, and IV, respectively, and remained through the fifth wave.

Basic Model. A maximum-likelihood approach (Jöreskog and Sörbom 1977) was used to estimate these multi-wave models. This allowed efficient estimation and provided for model evaluation with chi-square tests having degrees of freedom equal to the number of over-identifying restrictions in the models. Evaluations of this sort showed that models containing adjacent wave cross-coefficients (causal effects of television at time t on aggression at time $t+1$ and reciprocal effects of aggression at time t on television at time $t+1$) but omitting longer lag cross-coefficients, fit the observed data quite well. Longer lag coefficients were clearly insignificant. This means that consideration of the total effects of television on aggression can safely be confined to study of the adjacent wave pairs I-II, II-III, III-IV, and IV-V.

Individual coefficients for these wave pairs in the multi-wave adjacent wave pair models are presented in table 3. In each case, separate five-wave, four-wave, and two-wave models were estimated.

The overall pattern of television-effect coefficients (shown in columns 3 and 4) is essentially the same as found earlier in the elementary school sample: All coefficients are small, most are positive, and only a few are statistically significant. For personal aggression (part *a*), six of the eight coefficients are positive and one is significant. The average beta is .023. For teacher aggression (part *b*), six of the eight coefficients are positive, and two of the positive ones are significant. The average beta is .053. Finally, for property aggression (part *c*), five coefficients are positive, one of these is significant, and the average beta is .031.

Our concern is with the overall significance of this set of coefficients. Since the three aggression measures are not completely independent, there is no statistical way of making this evaluation across all 24 of the television effect coefficients in the table. However, the coefficients within multi-wave models are independent, and the respondents in the five-wave, four-wave, and two-wave models are distinct. It is, therefore, possible to assess the overall significance of the eight television effect coefficients for each of the three aggression measures separately. At the same time, it is also possible to evaluate the significance of the coefficients within each multi-wave model.

These assessments are based on chi-square evaluations, made by comparing the chi square of the television-effect model with the chi square of a model that sets the television-effect coefficients equal to zero but estimates the other parameters in a revised model. The chi-square difference between these two models is the difference made by the television-effect coefficients and is evaluated with degrees of freedom equal to the number of these coefficients being simultaneously evaluated.

The chi squares are reported in column 6 of table 3. Within-model tests evaluate these chi squares with four, three, or one degrees of freedom, depending on whether the five-, four-, or two-wave models are being considered.

The most important tests are those for the overall significance of the eight coefficients. As table 3 shows, none of these is significantly larger than the chi-square value expected by chance at the .05 level of significance. (The required chi square at the .05 level is at least 15.5.) Therefore, we can say on the basis of a rigorous statistical test that there is no overall significant association between violent television exposure and any of these three types of aggression.

Since we have multiple samples, it is also possible to evaluate the significance of individual models. When this is done, we see that the television coefficients are significant in one of the nine: the five-wave property aggression model; none of the other eight is close to significance. Inspection of the individual coefficients in the five-wave property model shows that the significance of television is almost entirely due to one positive coefficient (in the II-III lag).

On the basis of this evaluation, then, we find no support for the existence of a consistent television-aggression association even in this one instance.

The presence of replications of some wave pair coefficients in the five-, four-, and two-wave models allows us to make one additional evaluation: the possibility that consistently significant television effects are found at particular historical times, even though they do not exist in the set of coefficients as whole. There are two signs in the table that might be interpreted as evidence of some such historically specific television effect. First, the two largest property aggression coefficients are both in the II-III lag (in the five- and four-wave models). Second, the two significant coefficients in the teacher aggression models are both in the IV-V lag (again, in the five- and four-wave models). These two consistencies, though, occur in lags that have durations of either 5 or 7 months. There are a great many comparable lags in the models considered here, and there is no overall consistency in them to suggest that television exposure significantly affects either property or teacher aggression. Furthermore, reviews of television programing immediately prior to Waves II (October 1970) and IV (December 1972) were carried out to see if some special broadcasts associated with property or teacher aggression could be detected. But these investigations revealed no support for the notion of selective historical situations that might magnify the effects of television viewing on these particular types of aggression at these particular times. Given this inconsistency and uninterpretability, it is difficult to place substantive importance on these two replications.

We tested for the presence of nonlinearities and nonadditivities in the television-aggression relationships, but found no evidence for more consistent or substantial associations than those reported in table 3. We also adjusted for measurement error, but here again we failed to detect a consistently significant set of associations. However, the results of this adjustment procedure must be considered

Table 3

Basic Model Aggression Coefficients for Teenage Boys

		(1)	(2)	(3)	(4)	(5)	(6)	
		Earlier Aggression Coefficients		Earlier Violent TV Exposure Coefficients			Overall TV Effect	
	Duration	b	Beta	b	Beta	Total R^2	d.f.	X^2
a) Personal Aggression								
5-Wave Model (n = 285)								
I–II	5 mos.	.591*	.530	−.005	−.023	.279		
II–III	7 mos.	.419*	.443	.010	.058	.388	4	5.349^{NS}
III–IV	1 yr./7 mos.	.401*	.454	.016*	.094	.327		
IV–V	5 mos.	.241*	.260	.001	.008	.399		
4-Wave Model (n = 131)								
II–III	7 mos.	.317*	.319	.002	.011	.103		
III–IV	1 yr./7 mos.	.401*	.437	.004	.022	.267	3	1.475^{NS}
IV–V	5 mos.	.414*	.476	.014	.082	.372		
2-Wave Model (n = 143)								
IV–V	5 mos.	.297*	.348	−.012	−.067	.120	1	0.719^{NS}
Overall significance test (three models combined)							8	7.543^{NS}
b) Teacher Aggression								
5-Wave Model (n = 272)								
I–II	5 mos.	.636*	.546	.009	.044	.299		
II–III	7 mos.	.397*	.420	.006	.036	.307	4	7.658^{NS}
III–IV	1 yr./7 mos.	.198*	.236	.011	.074	.225		
IV–V	5 mos.	.630*	.565	.015*	.094	.486		
4-Wave Model (n = 130)								
II–III	7 mos.	.295*	.356	−.004	−.029	.127		
III–IV	1 yr./7 mos.	.343*	.299	−.002	−.015	.163	3	4.976^{NS}
IV–V	5 mos.	.312*	.395	.021*	.151	.413		
2-Wave Model (n = 137)								
IV–V	5 mos.	.632*	.678	.011	.070	.464	1	1.249^{NS}
Overall significance test (three models combined)							8	13.883^{NS}
c) Property Aggression								
5-Wave Model (n = 291)								
I–II	5 mos.	.524*	.418	−.009	−.059	.176		
II–III	7 mos.	.312*	.320	.018*	.144	.229	4	10.002^{S}
III–IV	1 yr./7 mos.	.352*	.408	−.003	−.025	.346		
IV–V	5 mos.	.531*	.536	.005	.044	.436		
4-Wave Model (n = 134)								
II–III	7 mos.	.266*	.274	.015	.103	.081		
III–IV	1 yr./7 mos.	.390*	.395	−.011	−.072	.210	3	3.188^{NS}
IV–V	5 mos.	.356*	.485	.007	.062	.376		
2-Wave Model (n = 143)								
IV–V	5 mos.	.463*	.477	.007	.052	.233	1	0.494^{NS}
Overall significance test (three models combined)							8	13.684^{NS}

* Coefficients are at least twice their standard error. S = significant chi-square value at p = .05. NS = insignificant chi-square value

equivocal because consistent measurement models could not be found.[18]

Subgroups. Specifications of the table 3 results in subgroups were also estimated. Fifty-two subgroups were examined in all, based on 26 attributes of the respondents, their families, and their environments. Most of these groups were similar to those examined for elementary school boys (such as SES, parental use of punishment and attitudes about aggression, respondent's aggressiveness when younger, performance in school, aggressiveness of friends). Some additional ones were available as well.

As in the case of the elementary school children, overall significance was found in only a few subgroups. Furthermore, the patterns of significance closely resembled a random model.

For personal aggression, as many as two significant coefficients were found in only 1 of the 52 subgroups studied: boys who reported in Wave III that they rarely get into arguments with other members of their families. For property aggression, significant associations were found in only two groups: boys whose fathers were not strict (according to mother's reports) and boys who were not aggressive as children (also according to the mother reports). The interaction of the television-aggression relationship with lenient fathers makes some theoretical sense, but the other two interactions do not. As a whole, the best explanations for these three to have occurred is chance. Consistent with this is the fact that none of these groups overlaps with groups showing significant associations among elementary school boys or girls and that no signs of significance were detected among teens with similar characteristics (such as boys who are not supervised, or boys scoring low on personal aggression when they were younger). With this evidence, we conclude that no meaningful specifications exist in the data.

Other Conceptualizations of Television Exposure. We explored the possibility that other conceptualizations of television exposure would be more substantially associated with teenagers' aggression than the violence exposure measure. The same alternative measures used in the analysis of elementary school children—measures of total exposure and of relative exposure to violent television, alternative weighting schemes, empirical viewing patterns, "favorite programs," and cumulative exposure—were used here. And the same results were obtained. No other measure of television exposure showed a significant relation with aggression.

Teens were also asked a series of questions dealing with attitudes toward television, questions which were not asked of elementary school children. The items were: liking television, liking violent programs, getting very involved in television, identifying with violent television characters, believing that television is realistic, being more interested in action than in plot, and thinking that television teaches aggression. It has been suggested that television violence interacts with some of these attitudes in causing aggression (Weigel and Jessor 1973). We tested this hypothesis by creating interaction terms for these attitude items and the weighted violence exposure scale and entering them along with the main effect terms into wave pair models that also controlled for earlier aggression. However, it should be noted that most attitudes were measured only once, in Wave IV, which limits the power of these tests.

One of these seven measures (television teaches aggression) showed a statistically significant interaction with television exposure to predict aggression. However, this one interacted weakly and all the waves in which interactions occurred began in Waves I and II, well before the attitude measure was collected. Thus, as a whole, the findings do not support these hypotheses about the interaction between television exposure and attitudes about television.

Delinquency Aggression

Reports of delinquent acts were rare in our sample of teens. As shown in figure 3, 76 percent of the respondents in Wave III, for example, did not report any acts of delinquency, 15 percent reported one, and only 9 percent more than one of the six acts. (These figures compare with about 70 percent who reported personal aggression, 60 percent who reported teacher aggression, and 40 percent who reported property aggression acts during the last 4 weeks in a given wave.) This reduces our ability to assess causal influences and thus makes conclusions about television effects more tentative than they would otherwise be. It also required us to conceptualize involvement in delinquency as a dichotomy (Yes-No) rather than as a frequency continuum.

Basic Model. We employed an analytic procedure designed to study dichotomous outcomes: individual-level logit analysis (Nerlove and Press 1973). Use of this procedure once again required two-wave models. As a control on initial aggression in these models we focused on *initiating* aggression; that is, beginning with the sample of boys who reported never having been involved in de-

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[18] It was not possible to arrive at a good-fitting measurement model for any of the three aggression scales in these 5- and 4-wave analyses without allowing for the possibility that either reliabilities or correlations among measurement errors differed from one time period to another. This could have resulted from the small number of indicators in each aggression scale or imprecision in the measures we selected.

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linquency, we predicted the probability of initiation from exposure to television. (Among boys who had engaged in that kind of aggression before, models assessing television effects on *continuation* of delinquent behavior could not be estimated because of the rarity of the acts.)

Initiation of delinquency was assessed by comparing a boy's report in a given wave with his report in previous waves. The comparison of the respondents' answers in one wave with their reports in other waves was also used to correct inconsistencies between different reports. The samples examined in these analyses, then, consist of boys reporting delinquent behavior for the first time and boys reporting having never committed such acts; those who committed an act prior to the lag under consideration were excluded.

Table 4 presents the results of this analysis. Since logit regression coefficients have no intuitive interpretation, we show here predicted probabilities of delinquency at various levels of television exposure. These probabilities are generated from the logit regression coefficients. They are smoother than the observed data and are monotonic, since they are generated by a mathematical model. But they do describe the general shape of the television-aggression relationship in each wave pair.

The *t*-ratios defining the significance of these relationships are also presented in table 4. Four of these *t*-ratios are positive, five are negative, and one (a positive one) is significant. As in our earlier analysis, we applied a global test and found that one wave-pair out of the nine could be statistically significant by chance alone. Therefore, we regard this result as statistically insignificant.

The logit specification is inherently nonlinear and therefore would detect simple nonlinearities. Nevertheless, we also estimated more complex nonlinear models, but these showed no improvement in prediction. No conventional measurement error adjustment procedures are available for logit analyses so the impact of measurement error remains unknown.

Subgroups. We tested the possibility that subgroup differences might be uncovered. But the low incidence of delinquent acts in the sample makes the results of this analysis a good deal less conclusive than those reported for the other samples. These results do replicate those reported above in the other subgroup comparisons, though. The distribution of significant coefficients again agrees with a random model of coefficients. And in only 2 of the 46 groups analyzed are there as many as two significant coefficients out of the nine estimated: among boys whose mothers often use physical punishment and among boys whose mothers get angry frequently. These are groups of "predisposed" boys. However, there is no indication of a significant television effect in related groups, such as those whose fathers use punishment or those who get into serious arguments with their family members. Furthermore, these two significant subgroups

Table 4

Results of Logit Analysis for the Impact of Violent Television Exposure on Delinquency Aggression

		Predicted probability of initiating behavior among teens with earlier television scores of . . .					
	N	(5th perc.)	(10th perc.)	(50th perc.)	(90th perc.)	(95th perc.)	*t*-Ratio of *b*
Adjacent Wave Pairs							
I–II (5 mos.)	–	–	–	–	–	–	– **
II–III (7 mos.)	209	.091	.096	.117	.155	.177	1.19
III–IV (1 yr. 7 mos.) .	175	.264	.273	.319	.410	.440	1.40
IV–V (5 mos.)	192	.058	.058	.062	.067	.068	.185
Non-Adjacent Wave Pairs							
I–III (1 yr.)	143	.169	.159	.129	.095	.084	− .867
I–IV (2 yrs. 7 mos.)	116	.296	.295	.293	.291	.290	− .038
I–V (3 yrs.)	80	.117	.097	.049	.017	.012	−1.03
II–IV (2 yrs. 1 mo.) .	172	.212	.229	.304	.436	.508	2.01*
II–V (2 yrs. 7 mos.)	115	.115	.097	.048	.016	.009	−1.16
III–V (2 yrs.)	113	.165	.126	.031	.002	.001	−1.62

*Significant at .05 level

**Boys in Wave I were asked only about three of the six acts which made up the delinquency scale, so we were unable to assess initiation by Wave II. However, separate models were estimated for these three acts and none of these was significantly related to Wave I television exposure. The three were: "was arrested" (*t* = .681); "participated in a gang fight" (*t* = .869); and "was badly beaten up" (*t* = −.044) are not among those that were significant among children, or among teens with the other aggression measures.

Other Conceptualizations of Television Exposure. We also studied whether a systematic television-delinquency relationship could be found using any of the alternative television exposure measures described above. As in the analyses of personal and property aggression, no evidence for any larger association was found. And, as in these earlier analyses, exposure to violent television was not more strongly related to delinquency than was exposure to nonviolent programs.

The Sensitivity of the Analysis Model

One consideration that has not been mentioned up to this point is the possibility that our analysis model is too insensitive to detect causal associations over the range of time lags we studied. We explored whether analyses using the same basic model and the same aggression indices would be sensitive enough to reveal significant associations between variables other than television exposure and our aggression measures. Variables selected for the analysis were those measured more than once that were consistently related to aggression in the cross-sectional analysis.

This analysis showed that the model and aggression indices were sensitive enough to detect consistently meaningful lagged associations. The level of aggression in the child's school classroom was a highly significant predictor of later aggression for both boys and girls; betas averaged .3 and all coefficients were significant. Among boys, other clearly significant predictors were: mother's occupation (blue collar/service occupation associated with higher aggression) and father's use of physical punishment. Among girls, the socioeconomic composition of the school (low SES associated with higher aggression) was a significant predictor.

Aggressiveness of the boys' friends and conflict in the family were the best predictors of teens' aggression. Other significant predictors were: friends' use of drugs, contact with aggressive behavior (an indicator of the amount of aggression in the boy's environment), an attitude by the boy that he has the right to commit certain antisocial acts.

All of these significant results were obtained by substituting the alternative predictors into the very same models used to generate tables 1 through 4. We cannot be sure that these results represent causal influences of the predictors examined. They could be due to unmeasured common causes. However, we can say with certainty that they demonstrate the sensitivity of the analysis scheme to detect meaningful associations. This is true, furthermore, even though these predictors were not as carefully measured as the television exposure score. Nor were systematic analyses of possible nonlinearities, nonadditivities, or attenuations due to measurement error made. We conclude, then, that our failure to detect consistently significant effects of television on aggression is not due to problems with the analysis model or the measures employed.

Additional Analyses

Although the analyses reported above failed to document a consistently significant relationship between exposure to television violence and later aggression for either boys, girls, or teens, they showed that more of the coefficients linking television and aggression are positive than negative. This may indicate that television had some very small, but consistent, effect on aggression. Another possibility is that unmeasured common causes of television and aggression led to this pattern of mostly positive signs.

In weighing these possibilities, the pervasiveness and robustness of the positive coefficients are the critical considerations. As we reported, not all the signs were positive. We found that most of the coefficients among elementary school boys and girls were positive. Among teens, most of the coefficients for common types of aggression were positive, but for the delinquency measure the positive and negative signs were about equally divided.

The robustness of the signs can be investigated by introducing controls for possible other causes of the television-aggression relationship into basic model regressions. We assembled a set of control variables—19 for boys and teens, 5 for girls—that we thought might play a part in the sign pattern. These are all characteristics of the respondents or their environments that are causally antecedent to and correlated with both television viewing and aggression. The variables include indicators of the child's socioeconomic background, race, and IQ. These controls were introduced one at a time into two-wave regression models (like those reported in table 1*a*) to see if the ratio of positive to negative signs changed.

Five cases were investigated: boys, girls, and three separate aggression measures for teens. Among boys a control for socioeconomic status of the respondents' families changed the signs from 10 positive out of 15 in the subsample for which SES data were available, to 8 positive and 7 negative. Furthermore, the size of the average beta coefficient was reduced from .013 to .004 in this subsample. Thirteen other control variables (of the 19 analyzed) reduced the number of positive signs. The other five left the signs unchanged.

In the girls' and teens' analyses, the imbalance remained when controls were introduced. However, in these analyses, too, there was a trend toward reducing the magnitude of the coefficients.

This analysis shows that the greater number of positive than negative signs is entirely due to common causes of television and aggression among boys and at least partly due to them among girls and teens. The remaining edge for positive signs is so negligible that no assertion about a small, consistent television effect can be made.

Discussion and Conclusions

Our results are in some ways consistent with those found in other research on this topic. In other respects they are different.

Perhaps the clearest contrast between the results reported here and those reported in earlier work is that we found no significant association between violent television exposure and subsequent change in aggression, while the experimental literature has demonstrated that exposure to specific filmed segments influenced several types of aggression. There is nothing necessarily contradictory between such findings and the ones reported here. The experimental literature is concerned with short-term arousal and modeling effects. The existence of the type of long-term socialization effects in a real-life context with which this study deals is not addressed in that literature.

Our results in no way argue that short-term arousal effects do not exist. The results are relevant, though, for understanding the long-term implications of experimentally documented short-term effects. If these short-term effects cumulated and generalized to day-to-day behavior, we would have found clear indications of that in our data. The fact that we did not find evidence of this sort suggests that these short-term effects found experimentally do not lead to stable patterns of aggression.

Like other real-life correlational studies, ours found a significant positive association between television and aggression at a point in time. It is difficult, however, to be very precise in comparing our cross-sectional results with those of the several cross-sectional surveys that have been carried out over the past decade, since our measures of television exposure and aggression differ in some respects from those used by others. But in general terms the sign and size of the correlations found in our samples are similar to those found in previous surveys.

The crucial feature of our study is its longitudinal design. Thus, it is most important to compare our results with the one other major longitudinal survey, by Lefkowitz et al. (1972). This is one instance where our results clearly differ from previous research: Lefkowitz and his associates found a correlation of .31 between their television measure and aggression 10 years later; there is no association of that size in our data.

The design of the Lefkowitz et al. study differs from ours in three important respects: They used a "favorite show" rather than a television exposure measure; the measure of later aggression was based on retrospective nominations rather than on ratings of current behavior; and, finally, their measures were taken 10 years apart instead of our 3-year maximum lag.

Their indicator of television exposure was based on mothers' reports of their children's three favorite programs when the children were in third grade. The use of that measure rather than child self-reports of actual exposure could account for the larger association found in the Lefkowitz study. However, in our own study we used this measure, too, and found that it is a very poor indicator of the child's television exposure. (It is correlated only about .25 with self-reported exposure.) Furthermore, we found that the cross-sectional relationship between the mothers' report of favorite shows (appropriately weighted for the violence content of those shows) and our aggression measures is much less substantial than that between the child's self-reported exposure and these same aggression measures. Indeed, while Lefkowitz et al. found cross-sectional correlations of .21 among third-grade boys between the mothers' report and aggression, we found much smaller cross-sectional correlations ranging from .03 to .09.[19]

The difference between our and their aggression measure could also account for different results. In the Lefkowitz study (1972), nominators in the tenth grade were not asked to rate their peers' aggressiveness at that time, but according to "the way they acted in school" based on "what you last knew of each person from personal observation and contact." The resultant measure is likely to be reputational: the rater has to make an evaluation based on his recollections which are bound to reflect cumulative impressions spread over varying time periods for each rater, as well as for the person being rated. The time reference of the measure is thus vague and the study does not actually measure a 10-year lag. Finally, as pointed out by Chaffee (1972), differences between the early and later aggression and television measures in the Lefkowitz study may have distorted the findings. In our study, television and aggression measures were identical at all time points.

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[19] The Lefkowitz et al. study also found that the relationship among boys was much more substantial than that among girls ($r = .02$ for girls). Although we did not collect mother reports from girls, our self-report analysis shows that the cross-sectional television-aggression relationship is higher among girls than boys. This finding of a higher relationship among girls was also reported in McLeod, Atkin, and Chaffee's study of junior high school students.

We believe that the results of our study are more compelling than those of Lefkowitz et al. because of the greater validity, consistency, and relevance of the measures we used. We also believe that the richness of the data considered here and the variety of analysis approaches to which we subjected the data increase the confidence in the results we found. In short, we feel that our study was more sensitive to the possibility of detecting an effect of realistic television exposure on actual aggression than any prior research on this subject.

In the present study, criteria for detecting an effect were not met for elementary school boys and girls, or teenage boys. This was true for total samples as well as subgroups considered to be predisposed. In other words, this study did not find evidence that television violence was causally implicated in the development of aggressive behavior patterns among children and adolescents over the time periods studied.

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Violence in Television Programs: Ten Years Later

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Questions about the amount of violence in mass media, particularly television, have been voiced almost since the advent of the media. Senate hearings about television violence were held as early as 1954. These concerns stem from fears that television violence leads to aggressive behavior, particularly among the young. The findings and the methods of laboratory and field studies have generated heated debate in both popular and scientific spheres. But an almost equally controversial issue has been how to define, measure, isolate, and analyze television violence itself.

One of the richest sources of information about television content, audiences, institutions, and effects is the 1972 six-volume report of the Surgeon General's Scientific Advisory Committee, *Television and Social Behavior*. In this review, we examine trends in television violence since the time of that report. In particular, we draw upon findings from our long-term, ongoing research project, Cultural Indicators.

The major thrust of the first part of this review is methodological. Over the past 20 years, violence has probably been defined almost as many times as it has been studied. Our main focus here relates to the considerable body of research in which the assessment of media violence is the main issue of investigation. We are less concerned with studies that use measures of television violence as an independent variable to define experimental conditions.

We will discuss the ways in which the Cultural Indicators and other projects have defined and isolated discrete acts of violence and elaborate upon some of the controversies surrounding this research. We will also focus on issues of reliability and validity concerning the Violence Index.

In the second part of this review, we examine trends and continuities in the amount and nature of violence presented in television drama over the last decade. We conclude by presenting theoretical considerations and empirical findings leading to recent refinements in the conceptualization of the impact of televised violence, partly derived from observing 10 years of stability in the portrayal of violence.

The Assessment of Violence in Television Programs

There are four basic ways in which researchers have assessed violence in television programs: (1) content analyses using trained coders and specific rules and definitions; (2) ratings or consensual measures in which people ("experts" as well as "everyday" people) rate the amount of violence in programs; (3) studies in which the researcher predetermines which programs are violent; and (4) studies using combinations of (2) and (3). This last group of studies usually focuses upon issues (motivation, prosocial behavior, etc.) other than violence. Tables 1 and 2 list studies that use the first two methods. The studies that fall in the third and fourth areas are not included because they are not concerned with measurement issues per se. Moreover, the methods actually used in these studies are usually similar to those in (1) and (2).

Content Analysis

Although most people would agree that there is violence on television, there is no consensus about the degree or amount of violence that exists. To rely upon people's unsystematic perceptions or opinions raises a number of important questions, including problems of selective exposure, differences in what to consider violence, and so on. Adequate and accurate analysis of the amount of

Table 1

Measuring Violence via Content Analysis

Authors	Phenomenon	Who Codes	Definition	How Used
Cultural Indicators Gerbner Gross Signorielli Morgan Jackson-Beeck	Annual weekly samples of prime time, weekend-daytime network dramatic programs	Trained coders (12–16)	Yes	To ascertain content on number of basic issues such as violence, aging, sex-roles, and minority presentation
Harvey Sprafkin Rubinstein	Week-long sample of prime time programs (video-taped)	Trained coders	Yes	To determine the impact of family viewing time policy on content, to isolate prosocial and aggressive behavior
Schuetz Sprafkin	Week-long sample of Saturday a.m. commercials (video-taped)	Two trained raters	Yes	To isolate prosocial behavior in children's TV commercials
Deiner DeFour	12 adventure programs	30 trained undergraduates	Yes	To answer question: does television content enhance program popularity?
Franzblau Sprafkin Rubinstein	Week-long sample of prime-time programs (video-taped)	Four trained raters	Yes	To ascertain amount of sexually aggressive (e.g. rape, aggressive touching) behavior in TV programs
CBS, Office of Social Research	Samples of prime time programming	Trained coders	Yes	To ascertain the amount of violence in programming
Slaby Quarforth McConnachie	Week-long sample of programs (off-air)	Undergraduates (trained & practiced)	Yes (Gerbner Based)	To assess violence on TV and attribute to major sponsors
Dominick	Week-long sample of prime time programs (off-air)	7 trained coders	Yes	To ascertain portrayal of criminal victims and law enforcement on TV
Clark Blankenburg	*TV Guide* Synopsis (1953–1969)	Coders	Yes	To ascertain trends in amount of violence in prime time programs
Head	13 week sample of programs (4 episodes/programs) (off-air)	4 coders	Yes	To analyze TV content
Smythe	Samples of programs (off-air)	Trained coders	Yes	To ascertain content of television programs on a number of basic issues

violence in television programing can only be achieved through systematic reasearch that includes explicit definition, reliable coding, and quantification of this phenomenon. Methodologically, content analysis provides a procedural framework that can be used to conduct this type of research.

Table 2

Measuring Violence via Ratings

Authors	Types of Phenomenon Directly Observed	Who Codes	Provided Definition	How Used
Murray Cole Fedler	List of Programs	Teenagers	Their own; half before half after rating	To determine whether teenagers who watch television, especially violent programs, possess characteristics which are different from teenagers who prefer less violent programming
Greenberg Gordon	List of Programs	TV critics, public (adults)	Half	To determine how much violence TV critics perceive in programming in comparison to that perceived by viewers
Abel Beninson	List of Programs	Children and their mothers	Half	To determine if there is agreement between children and their mother's perception of violence
Israel Robinson	List of Programs	TV critics, graduate students	Half	To ascertain demagogical characteristics of viewers of violent programs
Smith	List of Programs	Graduate students	Yes	To determine if "bad" drivers have a greater preference for viewing violent TV programs than "good" drivers
Loye	List of Programs	Psychiatrists, psychologists, parents, etc.	Unknown	To measure psychological effect of watching different types of dramatic content

Content analysis has been defined as "any technique for making inferences by systematically and objectively identifying specified characteristics of messages" (Holsti 1968, p. 601). The first step in content analysis is to design an appropriate recording instrument. Content analysis data are generated by coders who are trained to use this instrument; that is, they are taught to observe a phenomenon in a particular way. Thus, when a content analysis is rigorous, the coders' personal opinions should not be apparent—in the ideal case, every trained coder will generate exactly the same data. Moreover, this objectivity can and should be measured via reliability analysis. Thus, the researcher is assured that the data reflect actual properties of the material under investigation, as explicitly defined in the coding instructions, and not ambiguities introduced by uncertainties in the instrument or by coder idiosyncracies.

The study of television violence through content analysis has typically included the examination of several aspects of this phenomenon. Most analyses try to measure violence as precisely and as consistently as possible. Thus, the content analysis recording instruments include not only a definition of violence but also rules for isolating and counting the number of times violence occurs. These rules about unitization procedures specify what constitutes a discrete act of violence—when it begins and when it ends.

Since 1954, many content analyses have assessed television content and there are several good reviews of this literature (e.g., Catton 1969). The earliest important studies were conducted by Smythe (1954) and Head (1954). Briefly, both studies coded programs "off the air" and found a considerable amount of violence in New York City television programing.

Clark and Blankenburg (1972) assessed violence in television drama over a considerably longer period of time, 1953 through October, 1969. *TV Guide* synopses were used as the source material, and, as the authors clearly state, their measure or assessment of violence is probably underestimated, particularly in the case of television comedies. Since the source material was limited, the research only assessed general levels of violence; that is, a specific count of violent actions could not be done. Clark and Blankenburg (1972) found a high level of violence that appeared to be cyclical. There were peaks in 1955, 1959, 1963, and 1967, with especially high levels in the late 1950s.

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Content analysis has been used by researchers to isolate different aspects of violent content (Franzblau et al. 1977; Scheutz and Sprafkin, 1979). Dominick (1973) examined crime and law enforcement in prime time programing and found that two-thirds of the programs portrayed at least one crime. He also found that violent crimes were the most prevalent—murder, assault, and armed robbery made up 60 percent of television crimes. Moreover, television tends to overrepresent crimes directed against people rather than property[1] and to underrepresent violent crimes between family members.

The results of content analyses have been put to several interesting uses. Slaby et al. (1976) related television violence to the people who sponsor it. Using all programs braoadcast between 6:00 a.m. and 2:00 a.m. on affiliates of the three networks during 1 week in 1974, coders monitored the amount of violence on television and determined the rate of violence attributable to major commercial sponsors. They found 2,796 violent episodes during 376 hours of programing or 7.43 episodes per hour. The range of violent actions per hour was quite large, from none to 22.5 per hour.

There have been several grassroots movements concerned with ascertaining the amount of violence in programing. One such movement grew out of the research of Slaby et al. In 1976, the National Citizens Committee for Broadcasting (NCCB) set up a monitoring system to determine which companies were sponsoring the most and least violent programing. NCCB consulted with experts in the field to set up a system and used a commercial monitoring firm to gather the data. They reported the results of this project in *Media Watch*, their bimonthly newsletter.

Another grassroots movement that began about the same time, and is still actively involved in this work, is the National Parent-Teachers Association's TV Action Center. This project uses thousands of PTA members throughout the country—two units from each State—as monitors. Specifically, monitors are asked to note instances of "gratuitous" violence (violence used to maintain interest, violence that is not necessary for plot development, and glorified violence). They also look for instances of "sexploitation," as well as sexual, age, and racial or ethnic stereotypes. The PTA publishes a yearly program review guide that provides lists of the least and most violent programs and the programs' sponsors, as well as descriptions of individual programs as based upon their monitors' opinions.

An important aim of the PTA project is its hope to raise the level of public consciousness about this issue. The basic drawback of the project is that the monitoring is not fully objective; the PTA wants its monitors to express personal opinions about programing. While the PTA does supply some definitions and a short training program, it does not measure the reliability of the codings. Thus, the results of their monitoring project should be viewed with appropriate caution.[2]

The networks, especially CBS, have also been active in this area. Since 1972, the Office of Social Research at CBS has conducted its own content analysis of prime time network dramatic programing. Their annual analysis has focused on counting incidents of violence within programs, and as a result has been concerned with definitional and unitization issues. (Comstock et al. 1978). Typically, they find considerably less violence than nonindustry-conducted analyses—differences that often result from definitional and unitization issues.

Measuring Violence via Ratings

The second type of study that generates measures of the amount of violence in programs uses people ("experts" such as television critics as well as "average" people) to rate the degree of violence within programs. In this research, the raters typically are given lists of television programs and are asked to rate programs with which they are familiar, on a 3- or 5-point violence scale. These studies often manipulate whether or not raters are given a definition of violence, and most of the studies have found that it does matter. For example, Greenberg and Gordon (1970–71) and Abel and Beninson (1976) found that adult raters who were given a definition rated programs as more violent than the raters who were not given one. In the case of children, though, the opposite was true. Children rating without a definition rated programs as more violent. Other variations include having raters generate their own definitions of violence either before or after completing the rating task (Murray et al. 1970).

The best known rating study was conducted by Greenberg and Gordon (1970–71) as part of the Surgeon General's study of television. This research compared the ratings made by television critics with those of the public (adults). Greenberg and Gordon also manipulated, for the public, whether or not a definition of violence was supplied; the critics were given a definition and also asked to supply their own, if their definition was different from that given. They found that there was unanimity between the critics and the public about the 20 most violent shows in the 1969 television season. Moreover, the critics judged programs as more violent than the public. Finally, violence ratings increased when raters were given a definition of violence.

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[1] According to U.S. statistics, most crimes are directed at property rather than at people. See, for example, *Criminal Victimization in the United States*, A National Crime Survey Report. Washington: GPO, 1974.

[2] Another TV violence monitoring project, National Coalition on Television Violence (Decatur, Ill.), has recently been formed and has begun to monitor programs and isolate sponsors of violent programing.

Thus, it appears that requiring raters to adhere to an explicit definition may raise perceived violence levels. But it should be stressed that absolute levels are misleading and not the central issue; in fact, they are uninterpretable by themselves. A primary value of systematic research is that it provides a way to compare trends reliably over time. Agreements or disagreements about individual programs are far less important than the cumulative patterns and relationships contained in the total, coherent system of messages.

The Cultural Indicators Project

The most long-term and extensive content analysis of television programing that includes the study of violence is the work of the Cultural Indicators Project at the Annenberg School of Communications at the University of Pennsylvania (often referred to as the "Gerbner" research). This research began in 1967–68 with a study for the National Commission on the Causes and Prevention of Violence. It has continued under the sponsorship of the Surgeon General's Scientific Advisory Committee on Television and Social Behavior, the National Institute of Mental Health, the White House Office of Telecommunications Policy, the American Medical Association, and other agencies.

The research consists of two interrelated parts: (1) message system analysis—the annual content analysis of a sample of prime time and weekend-daytime network television dramatic programing and (2) cultivation analysis—determining conceptions of social reality that television viewing may tend to cultivate in different groups of viewers (see Gerbner et al. 1978, 1979, 1980*e*, 1980*f*; Gerbner 1973). The analyses provide basic information about the demography, character profiles, and action structure of the world of television drama.

The Cultural Indicators Project has published annual reports on violence in television programing, usually called "Violence Profiles." Comstock, et al. (1978) refer to these as "the single richest source" of data about television violence; at the same time, the methods and findings are by no means universally accepted.

The content data upon which the Cultural Indicators Project bases its message system analyses and reports are subjected to an extensive reliability analysis, and only those items meeting acceptable levels of agreement are included in the analyses (see Gerbner et al. 1979, 1980*e*, 1980*f*). Reliability measures are designed to ascertain the degree to which the recorded data truly reflect the properties of the material being studied and not the contamination of observer bias or of instrument ambiguity. The reliability assessment consists of the calculation of an agreement coefficient for each content item in the recording instrument. Five computational formulas are used; their variations depend upon the scale type of the particular variable being analyzed. Except for their respective scale-appropriate sensitivity to deviations from perfect agreement, the coefficients make the same basic assumptions as the prototype for nominal scales devised by Scott (1955). Thus, in the case of a binary variable, all formulas yield identical results.[3]

The agreement coefficients range from +1.00 to −1.00, where +1.00 indicates perfect agreement and .00 is agreement due solely to chance. A coefficient of .50 indicates that performance is 50 percent above the level expected by chance. We have defined acceptable levels of reliability as follows: Items with agreement coefficients of .8 or above are considered as unconditionally reliable, items with coefficients between .6 and .8 are accepted conditionally, while items whose coefficients fall between .5 and .6 are used with extreme caution. Table 3 contains reliability coefficients for violence-related items.

The data do not attempt to reflect what any particular individual viewer might see but rather what large numbers of viewers absorb over long periods of time. Thus, the research does not attempt to describe or analyze specific programs or series or to draw conclusions about artistic merit. The analysis isolates the patterns and symbolic structures that appear in the yearly samples. The purpose of this content analysis is to provide systematic, cumulative, and objective observations of many important aspects of the world of television drama.

Key Issues: Definitions, Unitization, and Sampling

The measurement of violence rests upon three key issues that have also been the basis for disagreements about the methods and the findings of violence-related content analyses. These are (1) the way violence is defined, (2) the way violence is isolated or unitized, and (3) the nature of the sample.

Definitions of Violence

Like obscenity, violence seems to be something everybody feels they can recognize when they see it, yet it is

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[3] For the derivation of the formulas and a discussion of their properties, see Krippendorff (1970 and 1980).

Table 3

Reliability Coefficients

Program Items	1967–1976	1977	1978	1979
Number of Violent Actions	.746 (I)	.860 (I)	.857 (I)	.862 (I)
Violence—Significance	.781 (O)	.740 (O)	.813 (O)	.765 (O)
Committing Violence	.704 (N)	.734 (N)	.657 (N)	.717 (N)
Victimization	.673 (N)	.691 (N)	.767 (N)	.668 (N)

(N) = nominal scale. (O) = ordinal scale. (I) = interval scale.

elusive and difficult to define unambiguously. Undeniably, if serious content analytic research on media violence is to be undertaken, a clear definition of the phenomenon is essential. The way violence is defined will directly determine the amount and nature of the violence that is coded in any study. Consequently, the definition of violence has been a sensitive and controversial issue. Although almost every study supplies its own definition of violence, most of the definitions have a common core that includes physical hurting and/or killing. Some of the specific definitions are given below.

In Cultural Indicators research, violence is defined as:

> the overt expression of physical force (with or without a weapon, against self or other) compelling action against one's will on pain of being hurt or killed, or actually hurting or killing (Gerbner et al. 1978).[4]

The definition of violence used in the CBS monitoring project is:

> the use of physical force against persons or animals, or the articulated, explicit threat of physical force to compel particular behavior on the part of a person (CBS Office of Social Research 1976–77).

The PTA isolates gratuitous violence which they define as:

> violence to maintain interest, violence not necessary for plot development, glorified violence.[5]

And, PTA monitors are instructed to focus primarily upon violence to persons, to property, and to laws.

Clark and Blankenburg (1972) define violence as:

> physical acts or the threat of physical acts by humans designed to inflict physical injury to persons or damage to property.

Harvey et al. (1979) and Scheutz and Sprafkin (1979) focus upon agression rather than violence, which they define as:

> acts involving the use of force, threats of force, or intent of force against others.

As noted above, some of the ratings studies manipulate whether or not raters are given a definition of violence before making their assessments of programs. These definitions also focus upon physical violence such as hurting.

Smith (1969) defined a violent program as:

> a program where usually at some point the action results in injury or destruction to some object, animal, or human. The injury may be psychological or physical . . . a result of verbal or motor action.

Greenberg and Gordon (1970–71) and Abel and Beninson (1976) use the same definition:

> how much fighting, shooting, yelling, or killing there usually is in the show.

Finally, some of the rating researchers have had raters supply their own definitions of violence—either before or after rating the programs. Again physical violence predominated. For example, Murray et al. (1970) found that teenagers' definitions of violence generally involved three types of acts:

1. Physical: violence to persons, damage to property
2. Mental: psychological and emotional (e.g., fear and hatred)
3. Verbal: verbal abuse

For the most part, these definitions are remarkably similar; most deal with physical force including hurting and killing. One basic difference is whether or not the definition includes violence to property and emotional or psychological violence. The Cultural Indicators Project, CBS, and Greenberg and Gordon do not, but most of the others do. These differences seem to have been uncontroversial, and no major disagreements have arisen because of them. The arguments and debates that have taken place have mostly been between industry-related researchers and the Cultural Indicators Project.

The differences have focused not upon the definition of violence per se but upon whether or not to include certain

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[4] The parentheses in this definition represent a recent refinement in order to aid clarity; before now, they have been commas.

[5] Individual Monitor Form, National PTA Action Center, 700 N. Rush St., Chicago, Ill. 60611.

"forms" of violence, specifically, comic violence, accidents, or "acts of nature." Some network researchers at CBS (Blank 1977 *a,b*) and NBC (Coffin & Tuchman 1972-73) have argued against the inclusion of "comic" violence and "accidents."

The Cultural Indicators Project, in contrast, records as violence all behaviors, phenomena, and incidents which meet the criteria set forth in the definition and coding instructions (Gerbner et al. 1977; Eleey, et al. 1972-73*a,b*). In regard to comic violence, Cultural Indicators records all violence that occurs in a fantasy or "humorous" context as well as all violence in a realistic or "serious" context. CBS, however, does not count as violence incidents which occur "in a context which would ordinarily produce laughter" or violence that is "not of a serious character." The network critics have attacked the inclusion of comic violence with the supposedly disarming example of a "pie in the face." Cultural Indicators, however, classifies as violence only the credible indication or actual infliction of overt physical pain, hurting, or killing. Thus, if a "pie in the face" does that—which will depend upon the specific incident—it is considered violence and is recorded as such.

There is substantial empirical evidence indicating that a comic context is a highly effective form in which to convey serious lessons (Bandura et al. 1967; Ellis and Sekura 1972; Lovas 1961). Moreover, CBS has been quick to point out that children can learn (perceive prosocial messages) in comic contexts.[6] Although CBS may assume that children will only pick up "good" messages in a "humorous context," the Cultural Indicators Project does not.

The second area of definition-related contention is whether or not to include accidents and/or acts of nature. Again, the networks have long argued against their inclusion (except those that occur in a violent context such as someone killed in an accident while escaping from a crime; CBS 1976-77) on the grounds that accidents are not "reasonable" types of violence. Cultural Indicators research has always included violence that occurs as a result of accidents and/or acts of nature because, in fact, there are no "accidents" in fiction. The author invents (or producer inserts) disasters, accidents and other "acts of nature" to serve a dramatic purpose, often to eliminate or incapacitate a character. Moreover, the pattern of violent victimization revealed through these occurrences may be a significant and telling part of television violence. It is hardly coincidental that certain types of characters are prone to accident or disaster in the world of television. And, these patterns may have significant effects upon viewers' conceptions. Therefore, if one is concerned with the full range of potentially significant consequences from violence in television programing, the only choice is to identify and report all types of violence that fit the strict definition.

Unitization of Violence

Disagreement has also existed around the question of how to isolate specific incidents of violence. That is, where does a violent action start, and where does it end? Although any decision in this area is somewhat arbitrary and open to debate, it is up to the researcher to operationalize the decision in the most appropriate, meaningful, and comprehensible fashion.

In the tradition of content research since the first studies of the 1950s, the Cultural Indicators Project's coding instructions specify that a violent action is a scene of some violence confined to the same particpants. If a scene is interrupted by flashback or shifts to another scene, but continues in "real time," it is still the same episode. Any change in the cast of characters, such as a new agent of violence entering the scene, starts another episode.

The CBS study, which is essentially the only other major study (aside from the NCCB monitoring[7]) that measures levels of violence and counts the number of actions within programs, defines a violent action somewhat similarly. In this case, it is:

> One sustained, dramatically continuous event involving violence, with essentially the same group of participants and with no major interruption in continuity (CBS 1976-77).

The major difference between the two rules is the inclusion of the ambiguous word "essentially" in the CBS instructions. Moreover, since the criteria for determining the "essential" set of agents are not specified, the CBS study seems to permit an unnecessarily subjective manipulation of the unit of analysis. In fact, the instructions to coders are rather vague on this issue, stating that:

> A violent incident is not absolutely synonymous with an "act." One "incident" might include brief breaks in the action, as in a protracted chase scene, interrupted by pauses for regrouping and reloading, or acts of violence by more than one person, as, for example, in a fight scene involving several people.

As a result of these differences the findings of these two major studies are different—but different in a very predictable way: CBS finds much less violence than does the Cultural Indicators Project (see Comstock et al. 1978).

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[6] "Learning While They Laugh," a CBS public relations booklet.

[7] For the most part, the NCCB project used Cultural Indicators methodology and unitization rules. The National Coalition on Television Violence has also begun to count discrete violent actions using Cultural Indicators methodology.

Sampling

Another area where there has been considerable debate and criticism of Cultural Indicators research is the nature of the sample used for the annual message system analysis—a single week of programing broadcast in the fall of each season.[8] Cultural Indicators has been aware of the dangers of using too small a sample and has conducted a number of sampling experiments to assess the representativeness of the 1-week sample used in the research. These experiments include an initial analysis in 1969 (Eleey 1969), repeated spring-season test samplings in 1975 and 1976, and an analysis of 7 weeks of fall 1976 prime time programing.

In the 1976 study, violence-related content data were collected for 7 weeks, including the week originally selected for the fall 1976 sample, of prime time programing. A large number of analyses, including several analyses of variance, were conducted and all led to the same conclusions—each of the 7 sample weeks yielded essentially similar findings. There were no significant differences by week for such measures as the number of violent actions, the duration of violence, and the significance of violence. There were, however, significant main-effects for program-related variables including network, type of program, time of broadcast, new or continued program and so on; *but* there were no significant interactions of these variables by sample week. Thus, for example, while the networks differed significantly overall from each other on these measures (see table 4), they did not do so on a week-by-week basis. Moreover, for the number of violent actions, the network rankings are remarkably stable during this time period. The same rank order of the three networks was found no matter which week was chosen, except for one instance when ABC and CBS were tied. NBC was always first, followed by ABC and then CBS.

These studies thus indicate that while a larger sample may increase precision, given the operational definitions and multidimensional measures that are sensitive to a variety of significant aspects of television violence, the 1-week sample yields stable results with high cost efficiency.

Indices of Violence

Indices abound in American culture. Most Americans are aware of economic indices such as the Consumer Price Index, and more recently the Pollution Index has been gaining recognition.

In research, indices are usually developed and used as data reduction devices. The usefulness of an index lies in its ability to reduce a lot of data to a simple number that can be used in making cross-sectional and trend comparisons. An index has been defined as

> a type of composite measure that summarized several specific observations and represents some more general dimension (Babbie 1972, p. 495).

Most of the studies that measure violence in television programing have not been concerned with indices. As noted above, the rating and pre-determined studies label programs from "very violent" to "not violent." When researchers want more sophisticated data, they are likely to use the number of violent actions as a measure of the degree of violence in different genres of programing. Ratings and the number of acts can be useful if one wants a very general measure of the amount of violence in programing.

But violence is a complex phenomenon, and a sophisticated analysis involves paying attention not only to specific actions but also to who is hurt, who does the hurting, etc. Thus, while simple measures such as the number of violent incidents reveal fluctuations in the basic level of violence, this type of account does not yield very rich analytic information.

Since 1969, the Cultural Indicators Project has developed and reported, on a yearly basis, a Violence Index that combines several violence-related measures. The Index is calculated for many genres of programs. It is not, however, calculated for the individual programs within the yearly samples.

The Cultural Indicators Violence Index is composed of three sets of direct observational data. These are measures of the extent to which violence occurs at all in the programs sampled, the frequency and rate of violent episodes, and the number of roles calling for characterization as "violents," "victims," or both. These data sets are called *prevalence, rate,* and *role,* respectively.

Prevalence (%P) is the percentage of programs in a particular sample containing any violence. Rate expresses the frequency of violent actions or episodes in units of programing and in units of time. The number of violent episodes divided by the total number of programs yields the rate per program (R/P). The rate per hour (R/H) is the number of violent episodes divided by the number of program hours in the sample. The latter measures the concentration or saturation of violence in time, and compensates for the difference in rates between a long program unit, such as a movie, and a short one, such as a ten minute cartoon.

Role is defined as the portrayal of characters as violents (committing violence) or victims (subjected to violence) or both, and yields several measures. These are the percent of violents out of all characters in a sample; the percent

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[8] In particular, CBS has argued that there is no such thing as a typical television week.

Table 4

Analysis of 7 Weeks of Fall 1976 Programing

	Test Sample Week						Fall 1976	Total
	1	2	3	4	5	6		
Total:								
No. of Programs	58	58	57	58	61	56	61	409
No. of Violent Acts	345	342	365	365	341	294	342	2,394
Rate (Average Acts per Program)	5.9	5.9	6.4	6.3	5.6	5.2	5.6	5.9
ABC:								
No. of Programs	20	20	19	19	20	19	19	136
No. of Violent Acts	114	107	112	132	116	106	110	797
Rate (Average Acts per Program)	5.7	5.4	5.9	6.9	5.8	5.6	5.8	5.9
CBS:								
No. of Programs	22	21	22	21	21	23	24	154
No. of Violent Acts	90	91	130	97	66	102	84	660
Rate (Average Acts per Program)	4.1	4.3	5.9	4.6	3.1	4.4	3.5	4.3
NBC:								
No. of Programs	16	17	16	18	20	14	18	119
No. of Violent Acts	141	144	123	136	159	86	148	937
Rate (Average Acts per Program)	8.8	8.5	7.7	7.6	8.0	6.1	8.2	7.9

Analysis of Variance of No. of Violent Acts

	F	df	p
Week	.248	6	ns
Network	11.989	2	p<.001
Week by Network	.342	12	ns
Residual		380	

of victims out of all characters in a sample; the percent of characters involved as violents or as victims, or both (%V); the percent of killers (those who commit fatal violence); the percent of characters who are killed (victims of lethal violence); and the percent involved in killing, either as killers, as killed, or both (%K).

The Violence Index is the sum of these five measures: the percent of programs containing any violence (%P), plus twice the rate of violent incidents per program (2R/P), plus twice the rate of violent incidents per hour (2R/H),[9] plus the percent of characters involved in any violence (%V), plus the percent of characters involved in killing (%K). That is:

$$VI = (\%P) + (2R/P) + (2R/H) + (\%V) + (\%K)$$

Prevalence, rate, and role are thus all reflected in the Index, giving it a sensitivity to various aspects of violence portrayals, and lending it a certain stability not easily altered or manipulated by superficial script changes. The Index itself is not, of course, a statistical finding, but serves to illustrate trends and to facilitate gross comparisons.

The National Citizens Committee on Broadcasting (NCCB) has reported two Indices that are based essentially upon the Cultural Indicators methodology. It must be noted, though, that in some of their reports, NCCB distinguishes between the "Gerbner" definition (including comic violence, accidents, and acts of nature) and a definition which does not include these types of actions. The NCCB program index is the sum of (1) the ratio of incidents of violence in a program to the total number of incidents and (2) the ratio of the time of violence (in minutes and tenths) in the program to the total time of violence in prime time. This index is used to rank programs from least to most violent. Advertisers are ranked by an index made by summing (1) the ratio of the length of violent programing sponsored by an advertiser to the total length of programing with violence in prime time, (2) the ratio of the number of incidents of violence in programing sponsored by the advertiser to the total number of violent incidents in prime time, and (3) the ratio of the length of violent incidents sponsored by the advertiser to the total length of violent incidents (in minutes and tenths) in prime time. ("Prime Time Violence Profiles," National Citizens Committee for Broadcasting and BI Associates 1976.)

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[9] The rates are weighted by two in the Cultural Indicators Violence Index so as to increase their importance. That is, the rates are usually very small numbers (on the order of 4 to 9) and the weighting increases their contribution to the Index.

The Cultural Indicators Violence Index has been subjected to intense criticism. CBS has criticized the index because it includes a set of measures rather than only a single indicator, such as the number of violent actions, and because the different measures may move in different directions (Blank 1977). But this criticism basically argues that the Violence Index is faulty because it meets the critieria of an index. Much the same criticism could be levied at any set of comprehensive indicators such as the GNP, the Dow-Jones, and many labor statistics.

Testing the Index

We have already noted that the components of the Violence Index achieve high intercoder reliability; over the last 11 years, the coefficients for individual items range from .65 to .86 (see table 3). Most importantly, the Violence Index meets the critical statistical and empirical requirements of an index: unidimensionality and internal homogeneity. A major criticism of the Violence Index has been that it may be combining "apples and oranges," that it mixes together disparate and unrelated dimensions (Coffin and Tuchman 1972-73). If, indeed, the components of the Index are not measuring the same thing, then it is wrong to combine them; but if they are manifestations of the same underlying dimension, then the Index yields a measure of television violence far more reliable and valid than any individual item.

Factor analysis reveals that there is only one factor underlying the five components of the Index for both early evening (8–9 p.m. EST) or late evening (9–11 p.m. EST) programs. Internal homogeneity for all prime time samples from 1967 to 1978 is .89 (Cronbach's alpha). Thus, the items are measuring a single dimension, and they are measuring it quite well (see table 5).

Critics have also argued that the weights used in creating the Index are arbitrary and unjustified. Yet, the Violence Index produces lower reliability estimates when the rate of violent acts per program and per hour are not weighted by 2. In each time period (and overall), as shown in table 5, weighting these two components adds about .05 to the alpha.

Finally, in weekend-daytime programs, the internal homogeneity is somewhat lower but still acceptable (alpha=.66). This is due, primarily, to one item: the percentage of characters involved in *killing*. In general, weekend-daytime programs have the highest rates of violent acts and the greatest number of programs containing violence, but they also have the smallest proportion of characters involved in killing. In fact, within weekend programs, killing is negatively related to the rate of vio-

Table 5

Reliability Coefficients for the Violence Index

	Unweighted Index			Weighted Index		
	Raw Alpha	Standardized Alpha	Theta	Raw Alpha	Standardized Alpha	Theta
All Program Data (*N*=162)	.70	.76	.82	.75	.78	.82
8–9 p.m. EST (*N*=60)	.69	.85	.86	.74	.85	.86
9–11 p.m. EST (*N*=60)	.74	.88	.88	.79	.88	.86
Weekend daytime (*N*=42) ..	.69	.66	.71	.65	.66	.71
Prime Time Total (*N*=120)	.75	.89	.89	.80	.89	.89

The "Unit Of Observation" is the time period (8–9 p.m., 9–11 p.m., and weekend daytime), for each network. The reliability estimates are based on all fall samples (1967–1978), the two spring samples (1975 and 1976) and the 6-week special sample (1976; for prime time *only*).

The "Unweighted Index" estimates represent reliability obtained by simply adding up the five components (percent of programs containing violence, rate of violent acts per hour, rate of violent acts per program, percent of characters involved in violence, and percent of characters involved in killing).

The "Weighted Index" doubles the absolute value of two items: acts per hour, and rate of violent acts per program.

The "Raw Alpha" indicates the reliability the index would have when its components are simply added up (in raw form).

The "Standardized Alpha" indicates the reliability the index would have if the items were standardized before they are added up. That is, the index would have this reliability if the raw scores were subtracted from the mean and divided by the standard deviation.

The "Theta" indicates the reliability the index would have if the items were *both* standardized *and* weighted by their factor score coefficients before they were added up. This is generally the maximum reliability possible to achieve in a given index.

lent acts per hour. Evidently, there is a tremendous amount of nonlethal violence on children's shows; when killing does appear, it seems to be accented as a central action, while other aspects of violence are downplayed.

Despite this qualification, these items are providing a reliable, unidimensional, internally homogeneous, and efficient measure of television violence.

The More Things Change . . .

One of the notable characteristics of violence on television is its overall stability and regularity, despite fluctuations by network, genre, and time period. For example, the percentage of programs containing violence has been strikingly consistent since 1967. Table 6 shows that over the past 13 years there are no significant differences in the proportion of programs which include violence, whether we look at the entire sample, at prime time, or at weekend daytime.

The number of violent acts per program tells a basically similar story, but here there are important exceptions by time period. For all programs, the yearly means show no significant differences. Yet, for prime time programs, we see a significant linear trend; while the means do not differ significantly, there is an overall pattern of increases in the number of violent acts per program. This is probably due to the relatively low frequencies of violent acts between 1968 and 1971; the mean number of violent acts per program has not been less than 4.4 since 1971. Thus, if anything, the past decade has seen an increase in the number of violent acts on prime time programs.

On weekend-daytime (children's) shows, on the other hand, there is a significant nonlinear trend. The number of violent acts on children's programs exhibits an almost cyclical regularity, down one year, up the next. And the fluctuations seem to be getting more extreme; the 1978 figure (7.46 violent acts per program) was the highest, while the 1979 figure (4.58) is the second lowest.

Table 6

Percent of Programs Containing Violence and Number of Violent Acts per Hour (1967–1979)

	Percent of Programs Containing Violence			Number of Violent Acts per Program		
Year	All Programs	Prime Time	Weekend-Daytime	All Programs	Prime Time	Weekend-Daytime
1967	81.3	75.0	93.8	4.98	5.11	4.72
1968	81.6	75.4	93.3	4.53	3.89	5.73
1969	83.5	70.3	98.3	5.21	3.63	6.98
1970	77.5	62.3	96.0	4.49	3.31	5.92
1971	80.6	75.8	87.8	4.69	3.85	5.95
1972	79.0	71.7	90.0	5.39	4.90	6.13
1973	72.7	59.7	94.9	5.29	4.47	6.68
1974	83.3	77.6	92.1	5.44	5.66	5.11
1975*	78.1	66.7	94.9	5.38	5.51	5.18
1975	78.4	69.7	91.1	5.64	5.47	5.89
1976*	76.5	67.7	89.4	4.86	5.22	4.34
1976	89.1	80.3	100.0	6.18	5.61	6.90
1977**	76.9	66.2	90.6	5.20	5.46	4.87
1978	84.7	74.6	97.9	5.79	4.52	7.46
1979	80.9	70.3	91.9	4.98	5.37	4.58
Total	80.3	70.8	93.6	5.21	4.81	5.77
Significance of differences between means	.38	.47	.47	.61	.32	.001
Significance of linearity	.74	.92	.83	.09	.02	.29
Significance of deviations from linearity	.32	.40	.40	.77	.69	.000

* Spring sample; all others are fall sample

** Does not include second week of prime time programing used in sampling experiment

Total $N = 1{,}603$ programs (935 prime time, 668 weekend-daytime)

In sum, despite year-to-year changes for specific networks, various time-periods, and individual genres, the amount of violence in the entire system of television's messages remains remarkably consistent.

But we emphasize that there is more to the problem than the sheer quantity of violence television presents, and would not call for the total elimination of television violence. Symbolic violence is a storytelling device which can serve many purposes. Our task is more to monitor and interpret rather than to judge, but we report our findings in terms of general standards of equity, fairness, and justice. Our concern is with the kinds of violence shown, the systematic and resilient patterns of who commits violence and who is victimized. These lessons of power, powerlessness, risks, and fates may be critical mechanisms of social control. In cultivating among the many a fear of the power of the few, television violence may achieve its greatest effect.

Gauging the Impact of Televised Violence

As noted above, the research we have been discussing is not only concerned with uncovering trends in the content of dramatic programing but also in ascertaining the contribution television viewing makes to people's conceptions of social reality. We have discussed the first stage of this research—assessing the content of television programing (particularly in relation to violence). We now briefly discuss cultivation analysis, including recent theoretical formulations and some recent findings and critiques of the research.

Cultural Indicators see television as the predominant conveyor of contemporary cultural images and patterns. As such, it serves primarily to maintain, stabilize, and reinforce—not subvert—conventional values, beliefs, and behaviors. Socially constructed "reality" gives a coherent picture of what exists, what is important, what is right, and what is related to what.

The world of television is an aggregate system of stories and images; and only a system-wise analysis of these messages can delineate the symbolic world which structures common assumptions and definitions for viewers and provides the basis for interaction (though not necessarily agreement) among large and heterogeneous communities. The system as a whole plays a major role in setting the agenda of issues that people will agree or disagree about; it shapes the most pervasive norms and cultivates the dominant perspectives of society.

The basic expectation guiding cultivation analysis is that the more time one spends living in the world of television, the more likely one is to report conceptions of social reality that can be traced to television portrayals. One of the most frequently used strategies is to select issues and instances from our message system data bank which exemplify television's distortions. Another strategy goes beyond the comparison of "real world" and television "facts" and attempts to deal with what Hawkins and Pingree (this volume) label "value system" measures. These concern "the more interesting, general aspects of social reality" by extrapolating from recurrent content patterns to make interpretations about the underlying "value systems" television may cultivate.

In both cases, various samples of children, adolescents, and adults are questioned about their beliefs and perceptions. Responses to these questions allow the assessment of the degree to which the more frequent viewers of television are more likely than less frequent viewers to give answers which reflect television's image of the world. These patterns are examined in light of various controls—age, sex, education, occupation, IQ, use of other media, peer group integration, etc.—in order to determine the extent to which television's influence may be seen as independent, complementary, or contrary to these other major social variables.

It is not unreasonable to expect that there might be some consequences of daily heavy exposure to a dramatic world in which—essentially year in and year out—men outnumber women 3 to 1; young people comprise one-third and older people one-fifth of their real numbers; professionals and law enforcers dominate the occupations; and an average of five acts of violence per prime time hour (and four times that number per weekend-daytime "children's" hour) involve close to two-thirds of all leading characters.

Television content is a reflection of larger, underlying cultural values. It is doubtful that its messages are particularly distinct from those imparted by other major media. If television is merely a more prevalent, insistent, and continuous source of stable images about power, authority, transgression, and fate, then everyone should be strongly affected regardless of amount of viewing, and comparing the responses of light and heavy viewers should produce a few marked differences. Attempts to find systematic relationships between amount of viewing and conceptions of social reality should be hampered by the fact that even "light" viewers are heavily exposed to its cumulative messages; "curtailment of variance" in viewing within the large subgroup called America should reduce the possibility of finding any "effects." After all, television has been universally experienced in our society and has been an invisible and integral part of the symbolic and physical environments for the entire lifetime of over half the population.

But television is more than that; differences do emerge. Television consistently explains a small but significant portion of the variance in a wide range of items. The small effects may shed light on the larger, more elusive, and ultimately ineffable consequences of living with television.

People are born into a symbolic cultural environment which cultivates a specific set of norms, expectations, myths, and ways of explaining the world to themselves and their children. Heavy viewing is part of a style of life which cultivates certain perspectives and actions in a way that traditional chicken-and-egg hypotheses cannot address. It draws people with certain predispositions to it and, in turn, cultivates outlooks and assumptions. Television is not some mechanical, isolated, "causal" force, imposed from without on our beliefs and behaviors, but the most widely shared purveyor of cultural values. Light viewers are not a control group; nonviewers (as opposed to light viewers) offer little in the way of understanding television's role in society, because of their meager numbers and their bizarre and irregular characteristics (Jackson-Beeck 1977; Tankard and Harris 1980). Nevertheless, demonstrated nonspurious differences in the outlooks of light and heavy viewers may represent greater absorption of those values, and a way of gauging their depth and resiliency to change.

Over the past decade, and across a large number of samples of all ages, substantial evidence has been accumulated that heavy viewers are more likely than are light viewers to hold perspectives and outlooks which are more congruent with television imagery. In addition to those issues most directly related to television violence (such as fear, mistrust, apprehension, and alienation; see Gerbner et al. 1978, 1979, 1980*e*, 1980*f*), television seems to cultivate images of aging and older people (Gerbner et al. 1980*a*); stereotypes about sex-roles (Signorielli 1979; Gross and Morgan in press; Gross and Jeffries-Fox 1978); conceptions of science (Gerbner et al. 1980*d*); family images and expectations (Gerbner et al. 1980*b*); health-related beliefs and practices (Gerbner et al. this volume); ideas about occupations (Morgan 1980; Jeffries-Fox and Signorielli 1979); and notions about sex (Gerbner 1980).

Variations in Susceptibility

A basic premise of cultivation analysis has been that in terms of policy decisions what happens to most people, most of the time, is more important than isolated or discrete effects. Cultural Indicators has sought to elucidate aggregate patterns and relationships between amount of viewing and audience conceptions of reality, while always acknowledging that the intensity and even the direction of the associations (as well as baselines) vary considerably across subgroups. And, it is these variations that have led to delving more deeply into the process of cultivation, in terms of conditioning and mediating influences.

By examining between-group differences through factors that may enhance or diminish associations, one can begin to understand which groups, on which issues, are more and less susceptible to the cultivation process.

For example, one finds that younger people are more vulnerable to television's negative portrayals of the elderly (Gerbner et al. 1980*a*), that the negative relationships between television viewing, IQ, and school achievement are stronger for boys (Morgan and Gross 1980), that adult women are more likely than adult men to show evidence of the cultivation of sex-role stereotypes (Signorielli 1979), that children in less cohesive peer groups (or none at all) show stronger associations between viewing and images of violence (Rothschild 1979), and that low parental involvement increases cultivation among adolescents (Gross and Morgan in press).

The results of cumulative analyses (implementing simultaneous controls within and across groups) led to the development of two new concepts, "mainstreaming" and "resonance," which seem to explain the most general and systematic fluctuations in cultivation patterns. "Mainstreaming" implies that differences deriving from other influences may tend to disappear among heavy viewers; rather than absolute, across-the-board cultivation, the impact of viewing may be restricted to those who would not otherwise share a given perspective. "Mainstreaming" thus implies a convergence, a homogenization of outlooks among "otherwise" disparate groups. As a result, cultivation is more evident among those who, as light viewers, are "out" of the "mainstream."

"Resonance," on the other hand, occurs when a given feature of the television world is most congruent with the social circumstances of the viewer. In these cases, heavy viewers receive a "double dose" of messages, and the interaction "resonates" and amplifies television's impact.

The critical feature of these two concepts is that they are only evident when specific subgroups are examined separately. In many cases, the implementation of simultaneous, multiple controls eliminates a relationship for a sample as a whole. But, as Hawkins and Pingree (this volume) note, "Simply proceeding with simultaneous controls without examining levels of cultivation within control variables could both obscure important processes and make the relationship appear spurious."

That, in essence, is the critical flaw in the major recent critiques of the cultivation concept. Doob and Macdonald (1979) tested the possibility that the "real" source of spuriousness in the relationship between television viewing and fear of crime is actual neighborhood crime level. Using a debatable procedure of averaging correlations across four areas (city/suburb, high/low crime rate), they found that the "average" coefficient was drastically smaller than the overall correlation. Yet, they acknowledged that the relationship holds quite strongly for city residents, particularly for those in high crime areas. This specification can be interpreted, however, as an example of "resonance"—where congruence between one's environment and television's messages amplifies cultivation. Clearly parallel results in our own data also have been found (Gerbner et al. 1980*e*) where, most importantly, this specification withstands all other controls, applied singly or simultaneously.

Stevens (1980), Hughes (1980), and Hirsch (1980) found that overall relationships between amount of viewing and various items from the National Opinion Research Center's General Social Surveys disappeared under multiple controls.[10] Yet in virtually every case, nonspurious subgroup specifications point unambiguously to the process of "mainstreaming." For one example, less educated people are far more likely to give "television answers" to "mean world" questions concerning interpersonal mistrust, alienation, and anomie; they also tend to show no associations between expressing these views and how much television they watch. (In some cases, significant *negative* associations are found, even after controls, among extremely mistrustful groups.) But among better-educated people, who, as light viewers, are relatively more trusting and less anomic, positive cultivation associations are enhanced even, again, after controls. Thus, television may cultivate a convergence of outlooks towards a "mainstream" view of the world, rather than generating absolute, across-the-board "changes."

While the conceptualization and operationalization of these two complementary processes have derived from the observation of consistent regularities in susceptibility variations (and not out of some a priori vacuum), they have already been found to fit most "exceptions" in the cultivation areas mentioned above (e.g., violence, sex-roles, aging, science, health, etc.) and in ongoing work regarding the cultivation of images of the workplace, attitudes toward blacks, sexual morality, aspirations, and self-direction versus conformity among adolescents. Confidence in the validity of these concepts is bolstered by independent supportive evidence.[11]

In general, "mainstreaming" implies a homogeneity which overrides or reduces the impact of demographic influences, while "resonance" reflects the role of real-life experience in the cultivation process. These refinements represent significant progress in the endeavor to investigate and understand television's more subtle but consistent consequences on conceptions of social reality.

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[10] See Gerbner, et al., 1980*c*, 1981 for more details.

[11] Our finding that greater viewing goes with greater "sexism" primarily for those who, as light viewers, are more egalitarian (Signorielli 1979) gains support in research by Lull, et al. (in press). Our finding that heavy viewing goes with a "mainstream" level of reading achievement scores (i.e., television viewing is positively associated with achievement for those with low IQs, but negatively associated for those with high IQs; Morgan and Gross 1980) is matched in terms of SES and other variables by the California State Department of Education (1980). Earlier results of Dominick and Greenberg (1972) suggest that greater exposure to televised violence goes with higher levels of approval of aggression primarily for middle-class children (who "otherwise" have lower approval levels), while lower class children are more likely to condone aggression regardless of viewing. Also, Werner (in progress) reports that Norwegian adolescents' attitudes toward the United States provide evidence of "mainstreaming," in that stronger positive relationships with viewing were found in outlying areas; in central areas, attitudes were more positive regardless of viewing levels.

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SOCIAL BELIEFS
AND SOCIAL BEHAVIOR

Introductory Comments

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The goal of American commercial television is to attract a large audience to view advertisements. The purpose of those advertisements, in turn, is to sell products. Specifically, advertising on television aims to enlarge the demand for a commodity and to enlarge the share of the market cornered by a particular brand.

The effects of television entertainment on Americans' belief systems, values, stereotypes, and social behavior are "side effects" of commercial television. For the most part, they are probably "unintended side effects." The intended effect is on consumer behavior and buyer attitudes.

In the light of these truisms, the quantity of research on the effectiveness of advertising to children is surprisingly small. This limited research literature is reviewed ably by Atkin, himself one of the principal contributors to this body of work. While I can hardly concur with his characterization of this research literature as "voluminous," his summary of it is informative.

The tendency of researchers on advertising to children to group all children under age 10 or age 12 into a single agglomeration for research purposes mirrors the tendency of commercial television producers to speak of all youngsters as "kids." Both tendencies are unfortunate. Progress in developmental psychology has come as we have recognized the distinctiveness of infants, toddlers, preschool children, school-age children, preadolescents, adolescents, and young adults. These individuals differ predictably in their thought processes, social relations, motor skills, emotional lives, cognitive abilities, interests, values. To lump them together in research is primitive. We may anticipate that further progress in research on advertising effects on children will come with recognition that such lumping usually hides information.

As informative as the research is which assesses the effectiveness of television advertising to children, I find myself even more interested in research on the social behavior of the characters in the ads and the influence of that behavior on viewers. The producers of television materials invest many more dollars and more human resources in the production of commercials than in the production of the shows that serve as the filler between commercials. This disproportionately heavy investment creates at least a presumption that commercials are quintessential television, the medium's "best shot," and thus arguably its most effective. This suggestion applies especially to the influence of television materials on young children, who do not understand the selling purpose of commercials.

It is the filler between commercials which has attracted the most research. Greenberg and his colleagues review a veritable cascade of content analyses of the entertainment material on television. Around the Nation, at various times of the year and various hours during the week, many research groups have tabulated what viewers are seeing on commercial television, and the findings are consistent across research groups. Some findings change from season to season, but the consistency of the findings across time is more impressive than those few changes that have been noted. Examples of secular changes in television content are the increasing prominence of blacks on television or the rising numbers of career women.

In my judgment, the single most important finding about the persons who populate the fictional world of television entertainment is that most of them are male. Since the early 1950s, male characters have outnumbered female by a 3 to 1 ratio. The sex disparity on television is even greater if only major roles are counted.

A second important finding is that children are "underrepresented" on television, relative to their proportion in the U.S. population, and so are people over 50 or 60 years of age. The world of television entertainment is a world of young or middle-age adults, and within that constricted age range the females are mostly of the younger ages. Children and the older adults in the United States are among the most faithful television viewers. Their opportunity to watch their own-age counterparts is restricted.

Third, the only American minority group presented on television with any frequency is black people. The viewer rarely encounters a Hispanic character or an Asian-American. Minorities tend to be presented in restricted and repetitive and therefore stereotyped ways, especially those minorities whose appearance is rare.

Davis and Kubey's chapter augments and complements Greenberg's, covering not only the way older people are portrayed on television but also the uses older viewers make of television. The topic is one for which there was scant evidence a decade ago. The speculations and scattered observations of the 1960s concerning the topic of television and the aging were replaced in the 1970s by research findings. Various studies have revealed that older viewers prefer reality-based shows over fiction—they choose news, documentaries, public affairs shows, travelogs. And, when they manage to locate the occasional older character in the parade of shows, they enjoy watching him or her. The special functions television may play in the lives of retired persons include marking the passage of time each day and providing structure and shape to the day's events. Centrally important is the capability of television to give the aging viewer a sense that he or she continues to be a knowledgeable participant in the world of people, in touch with what's going on.

Like the aging and the retired, women are a group in the population whose images in the media have been the topic of considerable research in the past decade. Roberts discusses this research, drawing on her experiences directing the Project on Human Sexual Development to provide a series of speculations about sexual learning in childhood as it may be affected by viewing television. Her clear statement reflects the concerns of many in the women's movement who have evaluated commercial television's curriculum of sex education. The research in which she participated in a large Midwestern city found that the majority of parents with preadolescent children considered television as their children's principal sex educator other than the parents themselves.

The reader of the chapters by Greenberg, Davis and Kubey, and Roberts will note that we have many more studies of the content of entertainment television than we have studies of the influence of this content on viewers' values, beliefs, attitudes, and thinking processes. Further, the studies of effects of television on thought and belief are less consistent in their findings across studies, and in fact are sometimes mutually contradictory. Further, the reported effects are often slight.

Hawkins and Pingree provide a systematic and sophisticated survey of these studies. They show that our extensive knowledge of what images and emphases are being purveyed in television entertainment is not matched by our assurance as to how these are being received and incorporated into various viewers' beliefs and attitudes. They discuss several characteristics of the research which may account for this state of affairs. One is that often the researcher does not determine what other information is available to the viewers. The investigation may specify what is conveyed about say physicians in television entertainment, but it contains no adequate data about other sources of information the audience members may have about physicians and thus is not able to say how the other sources interact with the content of television to establish a viewer's attitudes and beliefs. Another limitation, perhaps not sufficiently discussed by Hawkins and Pingree, is that these studies are predominantly based on self-report, in survey research using questionnaires or brief interviews. Self-reports contain built-in biases and distortions, and typically there is no way to discount these or correct for them.

Perhaps the most profound or intractable limitation on research aiming to identify ways viewers' beliefs and values are shaped is that so many of the values and attitudes carried on entertainment television are "mainstream" or culturally normative, especially for the U.S. working class and lower middle class. Therefore, in viewing entertainment television, many viewers simply find confirmation or restatement of what they have learned from other life experiences.

Hawkins and Pingree approach these realities about research on their topic with tenacity, subtlety, and incisiveness. Still, they leave the reader pondering the need for radically different approaches. The generalization which emerges from the research to date is that viewers' beliefs, values, and attitudes are affected by the content of commercial entertainment television. Estimates of the extent of that effect are not very satisfying for particular population subgroups. We need more information about the extent of television's effect on specifically the very young, the elderly, minorities, the uneducated and illiterate, the highly educated, etc.

On the basis of the 25 years of research findings which have emerged since my own interest developed in this topic, I hold the belief that the content of television entertainment is more likely to have an impact on behavior than it is to affect conscious beliefs and attitudes, those which are accessible to self-report.

Twenty years ago, Albert Bandura and his students showed that the impact of television on children can be demonstrated by simple observation of their postviewing behavior. He took no recourse to the children's verbalizations and self-reports. He relied on a clean experimental design plus on-the-spot observation of behavior for his striking results. Bandura has been widely admired by his fellow scientists for his straightforward conceptualization of his experiments and for the rigor of his designs, but in my opinion the special merit of its behavioral focus has not been sufficiently appreciated or emulated. Many investigators thought they were operating in the same tradition when they instructed subjects to push "help" buttons or "hurt" buttons. To my mind, that sort of dependent measure has none of the clear appeal of direct observation of interpersonal behavior. Bandura's model of behavioral research has not been sufficiently imitated.

If the special merits of the behavioral approach had gained sufficient appreciation in this field, we would have fewer studies of what women viewers think about the female characters they watch on television and more studies about how a woman's speech mannerisms, slang, gait, style of dressing, hairstyle, forms of greeting and leavetaking, and mode of social interaction are altered by what she watches on television. We might have fewer studies about what teenagers think about doctors, lawyers, cops, and criminals they have observed on television and more studies of the occupational choices of young viewers.

For the behaviorally oriented reader, the most interesting chapter in this section is Rushton's. For the prosocially oriented reader, it is the most hopeful. For the perhaps skeptical reader wondering whether television entertainment readily makes any difference about anything anyway, it is the most convincing.

Rushton reviews the research showing that positive as well as negative behaviors can be learned from observing such behaviors on television. Most of the initial demonstrations of the power of television in modeling behavior to be imitated by viewers were demonstrations that viewers acquired aggressive and antisocial behaviors from watching television. In the past decade, research in this tradition has turned from anti- to prosocial behaviors. Rushton reviews this newer evidence, showing that courtesy, kindness, cooperation, and social competence can be learned as well. Moreover, self-limiting fears and debilitating anxiety can be diminished by observation of competent behavior with feared objects or in anxiety-provoking situations.

The results reviewed by Rushton emerge from a number of studies at different sites by various investigators. Their coherence and consistency add to their persuasiveness. No conclusion is based on a single experiment; for each conclusion there are several independent sources of confirmation.

The size of some of the effects is impressive. Clinicians and educators have seen the possibility of practical results by adopting methods from this research.

Furthermore, this research literature is closely articulated with current theories in social psychology. It draws strength from the general vigor of that field. Here the research on prosocial effects stands in dramatic contrast to the research on advertising effects. The latter research is notably a-theoretical and is still isolated from the recent advances in developmental and social psychology. I believe that this contrast accounts for the greater clarity, consistency, and strength of the results with respect to prosocial effects. (We do not find experiments in prosocial behavior lumping together all subjects aged 12 years or younger. Nor do we find conclusions based entirely on maternal report of child behavior.)

Finally, the research on prosocial behavior relies on experimental designs rather than on surveys. The state of the literature today recalls a generalization which impressed the Surgeon General's Scientific Advisory Committee on Television and Social Behavior a decade ago: With respect to the effects of television, findings from experiments are clearer and more consistent than findings from surveys. I attribute this jointly to the differences in the designs themselves and to the reliance on observed behavior in experiments and on self-report in surveys. I invite the reader to consider this contrast as he or she reviews the interesting and provocative chapters in this section.

Television and Role Socialization: An Overview

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This review surveys five social roles in terms of the research addressed to them. Most of the research has been a documentation of the content available on television, almost exclusively commercial television. We have synthesized that documentation and then addressed the experimental and/or field research that brought new ideas to the issues at hand. It is a comprehensive review of major findings, but it was not designed to be exhaustive of every single study available. Rather, we chose representative studies and findings. The five social roles we have dealt with are: (1) family roles; (2) sex roles; (3) race roles; (4) job roles; and (5) age roles.

Family Role Socialization

The focus on family-role information from television has been almost exclusively content analysis or conjecture. Fisher and Dean (1976) identified the principal conjectures as viewers' learning general family-role information and modeling problem-solving situations depicted by television families. Waters (1978) asserted that the content may be altering assumptions about how parents and siblings should behave. Hines et al. (1977) more specifically suggested that the portrayal of family interactions is providing information about how family members should and do communicate and that children may question their own value in the family because of their underrepresentation in evening programs.

Content Attributes

The principal analyses of television families have emphasized three content dimensions: (1) family structure; (2) familial relationships; and (3) family interaction content and style. Viewers during prime time and Saturday morning series can choose from among 40–50 regularly presented families in a typical week of television. These families reflect three structural types—two parents with children; a single parent with children; and a married couple without children. The first two types each reflect about one-third of the families, the third about one-fifth of the families. The remainder are non-nuclear family relationships, e.g., cousins, aunts/uncles with nephews/nieces, in-laws (Hines et al. 1977; Buerkel-Rothfuss et al. 1978; Greenberg et al. 1980).

First marriages characterize somewhat more than half the adult members, one-fourth have never married, and one-tenth are widows or widowers. Divorce appears to be increasing, characterizing 5 percent, 8 percent, and 10 percent of the adults in the 1976 through 1978 seasons. The average family size is a little more than three persons.

Whereas sex-role analyses indicate that males outnumber females by a 3 to 1 margin in television fiction, the sexes maintain a nearly equal division in family characterizations. If one examines the full population of television characters in terms of whether or not the character has any relatives, six of every seven television characters have no identified relatives (Buerkel-Rothfuss et al. 1978).

Structural relationships concentrate on immediate family members (Johnson and Davis 1978). Eighty percent of all female family roles can be accounted for by depictions of the wife, mother, daughter, and sister in nearly equal proportions; the counterpart male roles fit the same pattern and distribution. Of more than 30 other family roles, none occurs frequently enough to consider further.

What do television family members do with each other? Fisher and Dean (1976) compared the role behaviors of television families with a set of role behaviors found in a sample of real middle-class families. They found considerable consonance between the two sets of data for husband and wife behaviors. Husbands were typically companions to their wives, helped their children by serving as friend, teacher, and guide, and managed the family finances; the wives wanted children, also helped them in the same ways, expressed concern for the management of family income, and shared decisionmaking with their husbands.

Johnson et al. (1978) recorded the topics of conversation among family members. More than 90 percent were discussions of personality, health, deviant behavior, domestic concerns, and job-related topics. Interactions between family members in shows which regularly featured families were initiated in equal proportions by male and female family members (Buerkel-Rothfuss et al. 1978). That same study reported that the husband-wife pairing was the most frequently interacting unit; the four possible parent-child pairings (mother-son, father-son, etc.) accounted for nearly half of all verbal interactions, but no single pairing predominated. However, each parent was more likely to interact with same-sex children.

A systematic analysis of three seasons of family portrayals focused on the directions and modes of family role interactions (Hines et al. 1977; Buerkel-Rothfuss et al. 1978; Greenberg et al. 1980). Directions examined were *going away* from someone, exemplified by the mode of evasion; *going against* someone, e.g., attacking; and *going toward* someone, e.g., providing support, information. These major findings appear as consistent outcomes in three seasons studied:

1. Television family members interacted primarily in affiliative modes, going toward someone, in nearly 90 percent of all interactions. Most common was offering information, with two other modes—seeking information and giving directions to others—occurring with prominent regularity. Parents were most likely to give directions, children least so. Parents and spouses were most likely to give support, children to seek it.
2. Interactions of evasion or withdrawal, going away, occurred in less than 1 percent of the acts.
3. Conflict between family members ranged from 10–15 percent in the three seasons examined, originating mainly in spouses and in sibling pairings that included a brother.

Greenberg and Burek-Neuendorf (1980) culled the family interactions occurring in the subset of black families on commercial television shows. Black family depictions from three seasons were combined, yielding 19 family units. Ten were structured as a single parent with children, nearly twice the number of nonblack families. The divorce rate, however, was equivalent, as was the family size.

The family-role distributions were markedly different. We have noted that nearly 80 percent of the total roles fit into spouse, parent, child, and sibling categories; for black families, these roles encompassed 96 percent of the characterizations. Black families did not have cousins, in-laws, nephews, etc. Black families had more children and, therefore, more siblings. Although the overall sex distributions were comparable, they differed in role; there were more black mothers than fathers and more black brothers than sisters; whites were equivalently distributed among these role-sex combinations.

Interaction patterns in black television families also differed from their white counterparts. Whereas male-female interaction in white families was about equal, 60 percent of the black family interactions were among males, with the black son the most active member of the family. Finally, important distinctions were noted in the content of the interactions. Whereas 11 percent of the white family interactions were conflictual, these behaviors accounted for 17 percent in the black families. Conflict in white families was fairly evenly distributed among role holders; in black families, it centered predominantly in the wife (one-third of all her behaviors were acts of going against her spouse) and in sibling relationships (more than one-fourth of their behavioral interacts). Black television families were structured differently and interacted differently both in terms of the participants and the content of those interactions.

Content Effects

Research linking exposure to these content configurations with the viewers' attitudes, expectations, and behaviors in the family domain is negligible. We can report some preliminary findings from one major project (Buerkel-Rothfuss et al. 1980). Survey data were collected from more than 600 fourth, sixth, and eighth graders in California and Michigan cities. Their level of exposure to television shows featuring families was assessed and weighted with the outcome of content analyses of family-role interactions on those shows (i.e., the modes of interaction discussed above). The youngsters' beliefs about the behaviors of both television families and real families constituted the dependent variables. Exposure measures segmented different viewing clusters, e.g., shows with broken families and shows with unbroken families, shows with grown children and shows with small children, black family and white family situation comedies, on the basis of factor-analyzing viewing patterns. The study looked at the relationship between viewing this content and family beliefs, in the context of several mediating variables, e.g., perceived reality of family-role portrayals, parental mediation over content. The most salient simple correlations between exposure to family role portrayals and perceptions of family behaviors were:

1. Watching family dramas (e.g., *The Waltons*) and/or shows featuring small children yielded the highest correlations (.23 or higher) with beliefs that real-life families are cooperative, helping, and sharing (prosocial family behaviors).
2. Watching shows featuring broken families and/or teenagers gave the highest correlation with beliefs that real-life families are antagonistic, verbally aggressive, and punitive (antisocial family behaviors).
3. Simple correlations between perceptions of television families and real-world families were fairly strong. Judgments that television families are prosocial were significantly correlated with estimates of the frequency of prosocial and helping behaviors in real families (.33); perceptions of antisocial activity in television families correlated with estimates of real-world display of antisocial behaviors (.19) and with verbal aggression (.29) in particular.
4. The mediating variables examined had mixed results. For example, perceptions of reality of presentation and perceptions of learning about family roles from television did not consistently enhance posited relationships between viewing certain family content and personal beliefs; positive parental comments, on the other hand, in which parents were endorsing the content seen, did facilitate most of the viewing-belief associations, including some expected to be inversely related.

Sex Role Socialization

No role area has been as extensively analyzed as that of sex roles. Content analyses abound, whereas experimental and field research is limited, albeit more available than in other role-socialization areas discussed in this review. We first summarize the results of content analyses that have focused on (1) distributional patterns of men and women on television, (2) their demography and social characteristics, (3) their physical and personality traits, and (4) their interaction patterns.

Since the early 1950s, with no published interest in the 1960s, and a massive interest in the 1970s, it has been repeatedly established that male characters outnumber females by a 3-to-1 ratio. Studies in the early 1970s indicated that the disparity in terms of *major* roles was even greater than 3 to 1 (Gerbner 1972; Tedesco 1974), but more recent work indicates that this has changed. For 1975, 1976, and 1977, Greenberg et al. (1978) indicate that women have major roles proportionate to their representation in the television population; for 1978, Gerbner and Signorielli (1979) report an all-time high of 37 percent of white females as major characters.

There are different locations for clusters of women on television. In situation comedies and family dramas, there is nearly one woman for each man; soap operas have the same distribution (Katzman 1972). At the opposite end, police-detective shows are 5 to 1 male, and Saturday morning cartoons 4 to 1.

The age of the characters yields another consistent sex difference. The typical female is younger. Women cluster in the mid thirties and younger brackets; men cluster at older ages. On Saturday morning, adult females are proportionately underrepresented, and teenagers are overrepresented (Levinson 1975). There has been a recent surge in the number of teenage females in evening shows.

By race, black women are underrepresented to the same extent as white ones; Hispanic women are outnumbered by a greater margin.

With both marital and parental status, men are more likely to have indeterminate allegiances. McNeil (1975) found that you could not tell if 46 percent of the men were married, compared to 11 percent of the women, and you could not tell if 53 percent of the men were parents, compared to 19 percent of the women. Gerbner and Signorielli (1979) concluded that family life was important to 60 percent of the women and 40 percent of the men, saying that "marriage, romance and family are woman's concerns in the world of television." McGhee (1975) found women more likely to appear in central roles when family or romance were central story issues.

The world of work is a world of men on television. Three studies estimate the unemployment rate of television women within the range of 64–70% (Seggar 1975; Dominick and Rauch 1972; McGhee 1975). Several studies lead to depictions of television jobs for men and women: Males are more likely to be in law-related jobs; females are underrepresented as lawbreakers and overrepresented as victims; at least 9 in 10 lawyers, ministers, storeowners, and doctors are male; women are usually secretaries, nurses, entertainers, teachers, and journalists. Males get more varied jobs; on Saturday morning programs, Busby (1974) found 42 different male jobs and 9 different female jobs.

Prestige comes with the job, and men get more of both; twice as many females as males are in low-prestige occupations. McNeil (1975) showed that half of the women and one-third of the men held jobs in which they were supervised by someone else and that 90 percent of the supervisors were men. A recent analysis by the U.S. Commission on Civil Rights (1979) shows only one upward trend in jobs for women on television—more law-related ones.

What personal traits differentiate television men from women? A review by McGhee (1975) identifies a representative set: Males are assessed as more rational, smarter, more powerful, more stable, and more tolerant; females are more attractive, happier, warmer, more sociable, more peaceful, and fairer. Others have indicated that females have more concerns with family, romance, and social relationships, while men are more professionally oriented to business issues, and females are less competent. Busby (1974) did an interesting analysis of two groups of Saturday morning male characters, heroes and husbands, as the antithesis of each other. Husbands came out as the heavies, literally overweight, less helpful, less intelligent, less logical, more quarrelsome, and less patient than heroes.

Henderson and Greenberg (1980) analyzed 21 common physical activities of television characters for 2 weeks of prime time and Saturday shows. Of the five most frequently occurring activities—driving, riding, media use, personal grooming, and eating—only one, driving, was done disproportionately more by males. Other activities which discriminated were entertaining, preparing food, and indoor housework (more occurring among females) and business phone calls, drinking and smoking, using firearms, and doing athletic things (more among males).

In terms of interactions between males and females on television, studies have focused on the relative dominance, nurturing, and independence of the two sexes. Studies by Turow (1974), Seggar (1975), Lemon (1977), and Henderson (1978) show dominance by men across shows but give some important caveats as well. Situation comedies tend to show females as equivalently dominant, as do episodes depicting family settings. It is outside the family that the male predominates over his female counterpart. Henderson focused on order-giving and found males higher with four different kinds of orders, except in situation comedies, where females were disproportionately high. Male orders were also more likely to be followed.Turow focused on advice and order-giving and found men giving orders on stereotypically masculine issues, e.g., business, law, government, two-thirds of the time, whereas females did so equivalently on male and female topics but predominantly on non-sex-typed topics. In the daytime shows, Turow found more feminine topics and more order-giving by females.

In terms of needing and giving support, McNeil (1975) found women more passive and less involved in solving problems. Henderson determined that men were far more likely to need physical support and women to need emotional support. Women asked for support more often and got it. Henderson also looked at "making plans" as an indicator of character independence and found that men made a disproportionate number of plans for themselves and for others and that each sex tended to carry out more plans made by same-sex plan-makers. But plans made by males were more likely to succeed.

Thus, the sexes on television are different from each other, individually and interpersonally. Some are more different than others, depending on time of day and type of program. Sex stereotyping, to the extent it reflects persistent, consistent, predictable attributes and behaviors, applies to the characterization of males on television as well as females. It is not only women who are pigeonholed in certain jobs and interaction patterns, but because stereotyping occurs in degrees, it seems that females are more stereotyped than males. A major portion of this difference stems from their less frequent presentation. If there were more women than the 1 in 4 now presented, writers could create more varied characterizations.

Content Effects

Three main streams of research dominate this role-socialization area. They focus on the effects of amount of television viewing, the impact of exposure to counter-stereotyped sex role models, and the nomination of preferred television characters. Let us take them in reverse order.

There persists a strong unidirectional sex bias in the naming of preferred television characters, presumably but not demonstrably because of the character trait differences in the portrayals of males and females on television. Girls cross over and choose male television characters as "characters they would like to be like when they grow up," but boys do not, or not nearly so often. Further, boys choose more total models, again presumably because more desirable male models are available. Miller and Reeves (1976) asked 200 third through sixth graders to nominate television characters they most desire to emulate. Boys chose 50 percent more such characters on the average than girls, and no boys nominated opposite-sex models, while 27 percent of the girls chose at least one male character. Some of the bases for choices differed by sex—a discriminating criterion for the boys was physical aggressiveness of the characters, and a discriminating criterion for the girls was physical attractiveness. In a near replication, Miller (1976) found all the boys and 71 percent of the girls choosing same-sex models.

As for counter-stereotype sex models, Miller and Reeves (1976) chose five female television characters in nontypical female roles—two police officers, a park ranger, a television producer, and a school principal. Children who could correctly identify the character and her occupation were compared with those who could not. For four of the five characters, those who knew the program content rated the occupation as appropriate for women to hold. Only the television producer (Mary Tyler Moore) failed, and the authors report a general lack of awareness of her job. The researchers extended the question to determining if there was generalization from television to real-life estimates of women filling these jobs, i.e., of every 10 people in each job in real life, how many would be women? Significantly larger estimates occurred for three of the five.

The overall impact of television exposure on sex-role stereotyping can be demonstrated with three important studies. Beuf (1974) focused on sex-typed occupational choices among heavy- and light-viewing 3–6-year-olds, and found that the heavier viewers made more stereotyped choices. McGhee (1975) also worked with youngsters, divided them into subsets of heavy and light viewers, and administered the Brown "It" test which permits a choice between activities usually associated with masculine and feminine roles. Heavy viewers were significantly more sex typed in their responses. Fifteen months later, McGhee replicated the study, obtained a similar difference between viewing subsets, but noted a sharp increase in the level of sex typing among light viewers. He administered a further measure of sex stereotyping, which asked the children whether a male or female figure would more likely be the subject of a brief story read to them. Heavy viewers gave more frequent sex-typed responses; however, heavy viewers made progressively more stereotyped responses for male-related items with increasing age, while light viewers showed an opposite inclination.

In summary, males on television are preferred as models; counterstereotypes, when they occur, are readily accepted; and heavy viewing contributes to a perpetuation of sex-role stereotyping, because few counterstereotypes are available.

Race Role Socialization

Hundreds of thousands of Americans live in sections of the United States devoid of black Americans, native Americans, Asian-Americans, and/or Hispanic Americans. For those Americans, at least, television provides a primary socialization opportunity through its portrayal of racial minorities in news and fiction. One might be equally interested in other ethnic groups, e.g., depiction of foreigners, but that question has been of less policy interest and is not addressed here.

There have been many content analyses of blacks on television over a fairly long time, but little attention has been paid to Hispanics or any other groups, save for sheer frequency counts. We have organized the studies in terms of (1) distributional characteristics, (2) character demography, and (3) character interaction patterns.

Content Attributes

Discussion of the population of minority television characters requires a brief reminder of its origins and recency. In the early 1950s, classic stereotypes of blacks performed the roles of Amos, Andy, and Beulah. Organized protests led to the cancellation of *Amos and Andy* in 1953. For the next 12 years, it was a struggle to find any blacks on network series. In 1965, Bill Cosby began *I Spy,* and 3 years after that came *Julia.* This began what *Newsweek* (1968) called the "race race." By the 1969 season, Dominick and Greenberg (1970) could document the growth in black portrayals on network television as expanding from 7 percent of all day and night characters in 1967 to 10 percent in 1968 and 10 percent in 1969. That same season, 21 of 56 shows featured at least one black performer (Lemon 1968). Blacks were also "discovered" for commercials, appearing in 4 percent of the day and night ads in 1967, and 10 percent in prime time and 12 percent in daytime ads in 1969. Gerbner and Signorielli (1979) reported that *all* minorities constituted 11.2 percent of the prime time characters in 1970, an average of 11.8 percent during the 1969–78 decade, and a high of 17.6 percent in 1975.

Blacks are the only minority currently or ever portrayed in any significant numbers. By 1968, their proportion in the television population reached 10 percent and has remained consistently near that level for more than a decade, a near equivalent to their census proportion. Hispanics are far fewer, reported as 2.9 percent during the 1970–76 period (Gerbner and Signorielli 1979) and 1.5 percent during 1975–77 (Greenberg and Baptista-Fernandez 1980). Orientals comprised 2.5 percent during 1970–76, and native Americans less than half of 1 percent during that same period.

Both black and Hispanic television characters are heavily cast into situation comedies. Baptista-Fernandez et al. (1980) compared all black characters from a week of prime time and Saturday morning television with an equivalent sample of white characters who appeared on the same shows. Blacks disproportionately appeared in situation comedies and on Saturday morning. This same study reaffirmed what has been called the "ghetto gulch" allocation of minority characters—41 percent of all black characters appeared on just six shows, and the same proportion appeared on shows with no white characters. By contrast, 75 percent of the white characters appearing on shows with at least one black had at least a dozen other white characters with them. Similar clustering has now been reported for the portrayal of Hispanics, one-

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half of those found in three seasons appearing on just four shows, featuring gangs and barrios.

Among demographic characteristics, sex, age, and occupation have been repeatedly examined. Black males outnumber females by a margin ranging from 2-1 to 3-1; white males have a 3-1 proportion over females. For Hispanics, it has been identified as a 5-1 margin. By age, the young black has been more regularly portrayed. More than one-third of the total population of characters under 20 have been black, nearly four times the representation of blacks in the television population. Even whites appearing on the same shows with blacks are different by age; some two-thirds of the black characters were in the youngest age category (under 23), compared with 38 percent of the whites (Baptista-Fernandez et al. 1980).

Blacks consistently have been less likely to have any job, to be lower in prestige in the jobs they do have, and to be less likely to have higher status positions (Seggar and Wheeler 1973; Northcott et al. 1975). An early trend for overrepresentation as lawbreakers has passed. An analysis of Hispanic occupations on television reveals nothing more professional than owning a restaurant and a heavy emphasis on unskilled or semiskilled labor. Further, of a total of 53 Hispanics found in 3 sample weeks, 22 were comic characters, and 22 were cast in lawbreaking or law-enforcing roles, thus yielding three significant images—"the funny Hispanic, the crooked Hispanic, and the Hispanic cop."

A small number of studies have looked at what the black characters do on the television shows. Lemon (1977) concluded that blacks dominate whites in situation comedies, with the reverse on crime shows. Banks (1975) compared all-black shows with integrated ones and concluded that, on the former, blacks "displayed a significantly greater number of stereotyped black characteristics, more personal and family problems and tended to have low social status," whereas, on integrated shows, blacks "displayed a significantly greater number of socially valued characteristics . . . and high social status symbols."

In her comparative analysis of blacks and whites on the same shows, Baptista-Fernandez determined that there were no differences in the rates with which characters gave, sought, or received advice, information, or orders. Racial discussions were infrequent.

Thus, we know a bit about the quantity and locus of portrayal of blacks on television for an extended period of time; information about Hispanics is just emerging, as are the characters themselves.

Content Effects

Here, the main questions have been whether the portrayals of minorities may affect the self-images of minority children, and whether they may influence nonminority youngsters' expectations about, and reactions to, minorities.

Television portrayals and their impact on the minority child's self-image have been more extensively studied with public television than with commercial television, e.g., *Sesame Street*, *Carrascolendas*, and *Villa Alegre*. Filep et al. (1971) demonstrated significant differences in the self-concepts of *Sesame Street* child viewers and nonviewers, but Williams et al. (1973) and Van Wart (1974) did not find consistent changes for *Carrascolendas*. For all three shows, however, gains were demonstrated in cultural pride, self-confidence, and interpersonal cooperativeness. Dimas (1970) determined that a movie depicting successful black athletes, entertainers, etc. enhanced the self-concept of black children.

Minority children and adults are more likely to watch commercial programs featuring minority characters and situations as part of their greater overall television watching. Further, black children are as likely as white children to select white characters as role models, but they are more likely to choose black characters as well, so the crossover goes in only one direction (Greenberg and Atkin 1978). In fact, the black child perceives there are more black television characters to watch than the white child does.

Hinton et al. (1973) found no support for a proposition that black youngsters who were more exposed to white-dominated media would develop destructive self-images. Indeed, it has been shown that black youngsters have more positive perceptions of black television characters (in terms of activity, strength, and beauty) than they do of white characters (Atkin et al. 1978). Furthermore, black children generally perceive commercial television characterizations of blacks to be at least as realistic, if not more so than do white children.

As for the impact of minority characterizations on white children, there is evidence of a dependency on television for information about minorities. White youngsters with the least direct experience with blacks reported that television was their most basic information source about the physical appearance, speech, and dress of blacks; these same youngsters had the most positive racial attitudes (Greenberg 1972). Two studies of *Sesame Street* provide evidence of positive racial attitude changes. In one, white children who had viewed for 2 years were more positive toward other races (Bogatz and Ball 1971). More recently, an experiment with white nursery school youngsters manipulated segments of that show containing nonwhite characters. One-third of the control group subsequently picked minority playmates from photos; more than two-thirds of those exposed to the multiracial segments made similar choices (Gorn et al. 1976). Studies of *All in the Family* among adults support a selective perception proposition, namely, that the prejudices one takes into the viewing situation are related to the show's impact (Surlin and Tate 1976; Vidmar and Rokeach 1974). However, Meyer (1976) examined the reactions of first-through-third graders to that show and found them responding very little to the "views of life" espoused by the characters. A quite different program, *Roots*, resulted in a positive impact on racial attitudes (Surlin 1978).

Clearly, there has not yet been an opportunity to examine the impact of the commercial portrayal of Hispanics on the race-role socialization of either Hispanic or Anglo children, although one may anticipate a strong emphasis on this question in the 1980s.

The scant pieces of evidence indicate that specific programing intended to influence race perceptions has a strong likelihood of doing so but that the impact of standard commercial programing has not yet been well identified.

Occupational Role Socialization

For those concerned with the kinds of jobs held by television characters, two interests have been paramount in the content analyses. First, there has been a longstanding interest in the extent to which higher prestige jobs dominate and lower prestige jobs are ignored. Second, there has been an interest in the portrayal of criminal justice occupations, notably cops and robbers.

Content Attributes

There is consistency in the finding that higher prestige occupations are overrepresented in fictional television, if census data are the standard of comparison (DeFleur 1964; Gade 1971; Seggar and Wheeler 1973; Long and Simon 1974; Greenberg et al. 1978). In the first such analysis, DeFleur found that nearly one-third of the television labor force were professionals and managerial level technicians, outnumbering their real-life counterparts by a 3-1 margin. Gade (1971) made similar conclusions from his analysis of soap operas; 62 percent of the females and 89 percent of the males were in the top three status occupation categories, in contrast to 19 percent and 30 percent of the real labor force. Seggar and Wheeler (1973) expanded this conclusion by determining that the upper-status emphasis existed equivalently among black, Chicano, British, and white characters in roles lasting 3 minutes or more.

The same set of studies demonstrates that the gap in real-life occupational portrayals is among the lowest occupational categories, not among the midlevel jobs. Again, DeFleur's original finding has not changed substantially. In the early 1960s, less than 10 percent of male television characters were in low prestige occupations, whereas one-half of the men in Indiana held such jobs. Nearly a decade later, Gade determined that, although 38 percent of the female characters held low prestige jobs, more than 81 percent of the women in the actual labor force were in those categories. For male characters, the discrepancy was even greater; 12 percent on television and 63 percent in real life were in lower job groupings.

Television has not been off base from the census in all job roles. DeFleur found as many female clerical workers in television as in his baseline. Seggar and Wheeler reported parallel proportions for farmers and farm managers.

Overall, television still offers jobs to men more than women; men are disproportionately likely to have jobs outside the home, and the employed females on television do not match the labor force data.

Television provides a narrow set of job opportunities. Seggar and Wheeler showed that 30 percent of all white males were in five different jobs, 42 percent of the British characters shared five jobs, and more than 50 percent of all blacks and Chicanos were in five specific occupations. Women were even more homogenous; more than half of them, from all ethnic groups, shared five jobs.

The world of work as cops and robbers was examined intensively by Dominick (1973). He compared television-character statistics with FBI crime statistics. The television criminal is much older, which largely ignores the under-20 groups that accounted for 35 percent of all FBI arrest reports in 1970. The television criminal is also much more likely to be a white American, 93 percent in all, in contrast with 70 percent in real-life data. Of further note is the strong emphasis on law-related jobs. In addition to cops and robbers, there are lawyers, judges, matrons, wardens, etc. Three studies spanning the early 1950s to the early 1970s place the proportion of law-related occupations not lower than one-fifth of all jobs and as high as one-third during prime time.

Content Effects

Surely a child's knowledge about job-holders, job attributes, and job prestige is quite limited. The child usually has early firsthand experience with a teacher, a minister, a policeman, cash register clerks, and salespeople. Jobs portrayed on television, with which they are unfamiliar, should be able to exert a primary influence. The available research supports that proposition for occupational role socialization. At the same time, television may serve to glamorize some jobs and demean others, either by ignoring or belittling them. Jeffries-Fox and Signorielli (1978) asked children open-ended questions regarding

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selected occupational roles; responses yielded job conceptions that were consistent with television presentations of these jobs. DeFleur and DeFleur (1967) had demonstrated similar outcomes a decade earlier. Siegel (1958) found that second graders' role expectations of taxi drivers tended to parallel alternative radio depictions they were exposed to. Miller and Reeves (1975) exposed youngsters to stereotyped and counterstereotyped occupational portrayals by women; child viewers, both male and female, were more accepting of whichever version they received. That is, if television gave them stereotypes, they accepted them as typical female behavior; if television gave them counterstereotypes, they accepted them. Their findings were a counterbalance to Beuf's research which showed that each sex made gender-appropriate career preferences and that these reflected occupations as they were typically portrayed on television. The research indicated there were no inherent reasons for such an outcome, but there was specifically a content-available reason.

Finally, we can provide some preliminary findings from a large-scale study (Abel et al. 1980) in a quasi-field experiment. Two cities were located, in which each had a syndicated daily television series not available during the last 5 years in the other city; each series had at least one primary occupation and one secondary occupation, not common to the other show. A city in Ohio provided *The Andy Griffith Show* for the occupations of barber and sheriff; a similar city in Wisconsin had *That Girl* for the primary occupations of actress and magazine writer. All fourth, fifth, and sixth graders in the two communities were surveyed, 554 in one and 969 in the other. Measured were role evaluation, gender appropriateness of job, perceived job rewards, power, physical attributes necessary for role, personal job aspirations, and job knowledge. Comparison groups included viewers and nonviewers, frequent and infrequent viewers, and current and noncurrent viewers. For all three successful role models—the barber, sheriff, and magazine writer—exposure positively affected the viewers' aspirations, evaluations, and perceptions of the role holders' rewards and physical requirements of the jobs. For the single not yet successful role model—unfortunately, this was the actress and the only female job-holder in the study—exposure had a negative influence. In this study, the primary effects existed between all viewers and nonviewers and between current viewers and nonviewers. Neither frequency nor recency of viewing was important. This locus of differences suggests there was lengthy retention of role-related beliefs and that repeated or continous exposure may not be essential for significant, longitudinal impacts to appear.

The researchers concluded that "being exposed to the programs substantially alters selected perceptions of occupational roles and . . . exposure definitely affects the child's aspirations for the occupation and their evaluation of the role."

Age Role Socialization

The most common approach to questions regarding the portrayal of the elderly on fictional television programing is by comparison of the age distribution of television characters to the age distribution provided by the census. Two notes should be entered before doing that here. First, since the 1970 census identified 11 percent of the population as 65 or older, the trend of the last decade has been for the elderly to constitute an even larger fraction of the population. Second, television has no mandate to reflect the population distribution on any demographic, social, or behavioral characteristics; therefore, discrepancies are not inherently negative.

In practice, two age groups are underrepresented in studies of television fiction—young children and the elderly (Ansello 1978). Fictional characters under 19 account for one-third of the census distribution but only 10 percent of the television population; barely more than 2 percent of the television characters are at least 65, by contrast with the 11 percent real figure (Gerbner et al. 1980; Signorielli 1979). Supportive data come from Simmons et al. (1977), with about 4 percent of the television characters in the preteen age bracket, 8 percent as teens, one-third 20–34, one-third from 35–49, 16 percent in their fifties and early sixties, and 3 percent 65 or older. The average age of the typical television character was assessed at 37. An earlier study by Peterson (1973) argued that the elderly were proportionately represented, but her show collection was nonsystematic and small (a collection of 30 half-hours), and she additionally coded the real-life age of the characters. Across recent seasons, there has been a distinct increase in the television population of teenage characters but no change in the frequency of the elderly.

Content Attributes

Studies have looked at the relationship between age groupings of television characters and a small set of other attributes: role type, program type, sex, race, job, and socioeconomic status. Older characters, especially men, tend to be cast in comic roles, in contrast to serious or mixed ones (Gerbner et al. 1980). Younger characters (under 20) are more than twice as likely to be cast in regular, recurring roles than in guest roles; the elderly appear equally often as regular and guest characters (Greenberg et al. 1980).

By program type, Gerbner and Signorielli (1979) indicated that the overall low representation of the elderly is even lower in weekend daytime television shows especially designed for young viewers. Their study and that done by Greenberg et al. (1980) indicate that the Saturday shows and family dramas are high in the count of characters under 20, who are not particularly visible on police-detective shows. The 20–34 group is seen particularly on situation comedies and crime shows but in proportions equivalent to their overall presence in the television population. Those 35–49 predominate on crime shows. Age groups older than this are dispersed among program types; the elderly are not particularly concentrated in any of the prime time program types.

By sex, the average age of a television female is nearly 10 years younger than a male (Aronoff 1974). Nearly half the television women are in the 20–34 age bracket, with only a fourth of the men in that same age category; the reverse is so for the 35–49 age group. Several studies converge in reporting that the aging world on television is a man's world. About one-fifth of the males are 50 and over; less than 10 percent of the females are. Moving further up in age, the elderly (over 65) have been identified as more than 90 percent male (Petersen 1973). Mature and aging women have been absent from television series episodes.

By race, blacks have been disproportionately reflected in the youngest age category and absent from the older groupings. In 1978, 38 percent of the black television characters were assessed as under 20 years of age, compared with 18 percent of the white characters. They were consistently underrepresented among older characters—only 6 percent of them qualified as over 50, compared with 17 percent of the whites (Greenberg et al. 1980).

By job and socioeconomic status, the results show that, as one ages, a higher level job and higher socioeconomic status follow (Gerbner and Signorielli 1979). The elderly are distinctly less likely to be in service worker positions or in the lower social classes. Contrary perhaps to popular belief, the elderly are not depicted as poor.

Image characteristics, in addition to demographic ones, have been examined. Aronoff (1974) reports striking negative characterizations; the elderly are "ugly, toothless, sexless, senile, confused and helpless." Gerbner and Signorielli (1979) find that the elderly are more comical, treated with disrespect and shown as stubborn, eccentric, and foolish. On a "good-bad" dimension, fewer older characters have been labeled as good, and proportionately more have been labeled as bad than in younger age groups. Aronoff concludes that, in a world of generally positive portrayals and happy endings, less than half the older males and a small fraction of the older females are seen as successful, happy, and good.

These attributes emerge primarily from prime time programing. In sharp contrast, Cassata et al. (1980) identify the older person on soap operas as attractive, usually employed in an important position, and an independent individual.

Greenberg et al. (1979) looked at the prosocial and antisocial behaviors of television characters of different ages. Little difference existed among ages in the commission or receipt of prosocial behaviors. However, those from 50–59 and over 60 were much less likely to initiate any physically aggressive acts, while at the same time being likely targets of such acts by others. In further contrast, these two older age groups were particularly more likely to be verbally aggressive; behaviorally the elderly were more insulting, verbally hostile and cranky, and more often the target of antisocial physical aggression.

Content Effects

The same refrain exists; we can posit a good deal about the social learning that might accrue from certain consistencies in the portrayal of different age groups, but the research evidence is fragmentary. For example, four studies find that as one's real age advances, perceptions of the portrayal of the elderly on television are more positive (Davis 1971; Bower 1973; Harris 1975; Korzenny and Neuendorf 1980). Hemming and Ellis (1976) report more overall viewer dissatisfaction than satisfaction with the way television depicts older people. Interestingly, they found the time of day of viewing correlated with these perceptions—maximum unfairness was attributed to programs shown after 11:30 p.m., and maximum satisfaction with daytime programing, which agrees with the Cassata et al. (1980) content findings.

Other studies are more direct tests. Studies by Gerbner and his associates (1979; 1980) found that heavier viewing, especially among young people, is related to more negative and unfavorable perceptions of older folks. The heavier viewer is more likely to believe that older people are not open-minded, not bright, alert, or good at getting things done. Younger viewers also held stronger negative views of older people, suggesting that younger viewers, earlier imbued with television's depiction of old people, are less likely to express any independent view of this age group.

Korzenny and Neuendorf (1980) studied the self-perceptions of the elderly, as related to motivations for viewing and content interests. They found that positive perceptions of television's portrayal of the elderly enhanced the self-concept of older people, and negative reactions diminished that concept. Furthermore, the heaviest viewers were more likely to perceive the television elderly as hindrances to society, especially if the greater viewing encompassed more fantasy content; they also had lower self-concepts. Watching reality-oriented content led to opposite outcomes; the television elderly were judged more positively, as were the self-judgments.

Discussion

The state-of-the-art is less than classical. One finds much rhetoric, cascades of content analyses, and a paucity of convincing data. The content analyses typically do enhance the rhetoric by identifying a substantial amount of media content malevolence. Proof of impact—much more tedious, qualified, and time-consuming—has not been pursued with much vigor. Without some external force prompting researchers to focus in on race roles or sex roles, there could be a slow accumulation of fragmentary evidence.

The emphasis in both policy and research has reflected largely the pejorative aspects of social roles and social behavior on television. For a brief period in the 1970s, one could find a flurry of interest in the prosocial outcomes of television content. This review finds a pointed focus on pernicious television images. It is refreshing to be able to relate that family interactions on television are overwhelmingly affiliative and not destructive. At the same time, an emphasis on that fact could well deter social interest and research in that area.

For most social roles, television will not be an exclusive or even a primary source of information. It will supplement, reinforce, and complement. The media hermit, however, is rarer than the media addict. The best bet is that we would be able to continue to demonstrate a modest influence in the general population of youngsters on most of the social role issues that can be operationalized.

One paramount issue remains: the extent to which the conclusions from content research are based almost exclusively on the sheer frequency and quantity of a content phenomenon. It may be a legitimate proposition that extensive omission and ignoring of a role category will lead to social devaluation of that role. If Hispanics are not seen on television, perhaps that implies to some that they are not worth seeing. On the other hand, if not many clergy, dentists, or bankers are seen, it is doubtful they are less thought of for that reason.

Almost exclusively, the typical content analyses absorb and lump all characters together in identifying the average. There are some subgroup comparisons, e.g., regular versus guest roles, but they do not capture the essence of qualitative differences among characters. Is exposure to 14 different women across that number of shows equivalent to watching *Alice* (a divorced, working mother) in 14 episodes? Is watching the *Jeffersons* (a black family situation comedy) for a season equivalent to full exposure to *Roots*? Sampling the population of television characters and drawing inferences about their potential impact are an imprecise approach to making role socialization predictions.

Let me propose an approach that would emphasize a *critical characters* focus. First, one would determine the principal characters and favorite shows watched most regularly by young viewers. Then, an intensive analysis of those particular characters, over time rather than for a single episode from a sample week, would provide much richer portrayal information upon which to base socialization hypotheses.

Despite all their viewing, children are primarily attracted by not more than a dozen shows. Those deserve special attention. Census-type information across all of television has its function, but that function is not very appropriate to the socialization questions. It largely argues that all messages and all impressions are nominally equivalent. They may be for descriptive purposes but not for predictive ones. A fan of *M*A*S*H**, without military experiences, may be expected to derive certain impressions, expectations, and values about military doctors, nurses, soldiers, war, medicine, etc. Such impressions are not likely to be reflected in a thematic or character analysis of all of television content. One can begin to isolate specific patterns of television experiences as the basis for postulating social role outcomes and to move away from hypothesis generation solely on the basis of large-scale content analyses.

This does not necessarily lead to role learning that is idiosyncratic to some individual character or story line. It is a compromise between the research which focuses on a single series, e.g., the *All in the Family* studies, and those which focus on all of television, with no ability to pinpoint the originating content.

The main point is to identify the content that is expected to impinge on role-socialization issues. In addition to more extended analysis of that content over time, it is important to consider the possibility of assessing new attributes. For starters, we can suggest three: (1) "*intensity*" of content portrayals, e.g., one verbally aggressive interaction is not the same as another one; (2) *duration* of those portrayals, e.g., a 15-second characterization is different from one that proceeds for 4 minutes; and (3) *longevity*, e.g., a character I'm watching for the fifth season may have a very different meaning for me than one I'm looking at for the first time.

This proposes to refocus content analyses for the particular needs of role-socialization theory and research. That kind of research requires significant expansion in field and laboratory data compilation if one expects to have more conclusive statements about the role-related impacts of television.

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Television Advertising and Socialization to Consumer Roles

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This review examines the contribution of television to the formation and implementation of consumer role orientations in the American economic system. The research focuses on the consumer socialization of children and adolescents who rely on television as a major source of learning about product consumption. Consumer socialization is the developmental process by which young people acquire the knowledge, attitudes, and skills relevant to their functioning in the marketplace. Since adults' patterns of consumer behavior are also influenced by television, this topic will be given brief consideration.

The preponderance of consumer research has dealt with television commercial advertising messages. Although persuasive advertisements have the most obvious relevance for consumer role learning, other types of informational and entertainment messages may also have significant influence. The final section of this review discusses the possible effects of nonadvertising content, such as public service announcements, game programs, and dramas.

Several types of audience response to television advertising are related to consumer roles. These responses reflect a rather constrained form of learning, since advertising is not intended to educate consumers in the well-rounded manner that other agents of socialization might seek to provide. At the *cognitive* level, ads produce awareness of alternative brands and information about product and brand attributes. *Affective* responses include brand preferences and generic materialistic attitudes regarding products and spending. In terms of overt *behavior,* advertising plays a role in purchases, requests to purchase, and amount of consumption of purchased products. Underlying these outcomes is the information processing of consumers; this involves such factors as comprehension of advertising, acceptance of advertising claims, evaluation of product attributes, comparisons among brands, and reliance on ads as an information source. This review will summarize a broad range of research studies assessing the effects of television advertising on these consumer orientations.

Aside from impact on consumer cognitions, attitudes, and behaviors, television advertising has a number of social and psychological side effects; for instance, ads affect parent-child conflict over purchases, aggressive behavior arising from product disappointment, learning about sex and race roles portrayed in ads, and lifestyle orientations based on advertising depictions. Since these consequences are beyond the scope of this review, other chapters and articles should be consulted (Atkin et al. 1980; Adler et al. 1977; Tuchman 1978; Atkin 1975*b*; Tan 1979; Busby 1975).

Unlike many other types of television effects, the question of television advertising impact has come under scrutiny by government regulatory agencies. Throughout the 1970s, the Federal Trade Commission (FTC) conducted inquiries into certain types of ads, such as proprietary medicines, food products, and cereal premiums. In 1978, the FTC proposed rules that would restrict advertising directed to young children. Although most of these regulatory thrusts have been thwarted, research on television advertising continues to be relevant to policymakers as well as social scientists.

Basic Models

Advertising communication via television involves a complex interplay of stimulus and receiver variables. The receiver is the consumer, who is viewed as an information processor trying to absorb and deal with available messages relevant to product selection decisions. Consumer behavior theorists make a distinction between levels of psychological involvement in this decision-making. Much consumption is trivial and non-ego-involving, where the consumer has only weak commitment to brand choice (Robertson 1976). Consequently, there is a lack of involvement in the information-processing task, and the consumer is essentially a passive receiver. For more important decisions, the consumer becomes involved as an active seeker and evaluator of information, systematically considering various options along a number of decisional criteria. The role of advertising varies considerably between these two fundamental contexts.

High Involvement Model

The classic advertising models were developed to describe the mental stages experienced by a consumer during a highly involving decision process. This is termed a "hierarchy of effects" approach, where the advertising moves the consumer through a sequential series of responses from cognitive learning to behavioral enactment (Ramond 1976). The sophisticated consumer devotes attention to the message, critically perceives the content (possibly derogating the source, ignoring some appeals, and challenging some arguments made in the ad), and evaluates the relevance of the benefits to self before forming a preference and then acting. The multiattribute expectancy-value models have been applied to this process; the advertiser concentrates on changing beliefs regarding the linkage between the advertised item and various product attributes that the consumer already values.

Most models of mass media persuasion focus on variations in the source and message factors that affect attitudinal response (Atkin 1981). For advertising, the source credibility dimension of trustworthiness is considered most crucial; competence and dynamism are also important. High source trustworthiness is often achieved by using professional characters or ordinary amateurs who share similar characteristics with the target receivers. (For children's advertising, this usually means using child actors of the same or slightly older age as the viewers.) Competence is projected by employing sources who have special expertise relating to the product or who convey general authoritativeness. (For children's food ads, this may be a healthy athlete or a parental-figure adult.) The dynamism dimension is typically created by depicting a celebrity endorser, a highly attractive professional model, or a unique trade character. (In children's commercials, McDonald's features the clown Ronald McDonald, and Kellogg's promotes the animated Tony the Tiger.)

Among the message factors, both content and structural elements are important. Persuasion strategies that tend to be effective include fear appeals, comparative brand claims, explicit recommendations to buy, and stylistic hooks such as humor, sex, and music; the evidence on the relative efficacy of emotional versus rational appeals depends on the situation. Among the structural dimensions, heavy volume and repetition are effective.

Another theoretical perspective relevant to consumer behavior is Bandura's (1971) social learning theory. This conceptualization proposes that modeled behaviors, such as eating or toy playing portrayed in commercials, will lead to higher levels of viewer consumption of corresponding products. This impact should be generic rather than brand specific, since disinhibition or response facilitation explains responses to a broader category of products depicted rather than to the distinctive brands within the category (Atkin 1976).

Finally, postpurchase reinforcement from advertising has been identified as a significant process. In this situation, the consumer selectively seeks or avoids exposure to ads and selectively perceives message content in an attempt to form a more favorable attitude toward the chosen brand. The tendency to bolster prior purchase actions through selective information processing is predicted by dissonance theory, which posits that an ego-involving decision between comparable alternatives will produce psychological defensiveness.

Low Involvement Model

When the consumer does not particularly care about a trivial decision, another sequence of stages occurs. Based on Krugman's (1965) passive learning theory, researchers propose that the consumer acquires a minimal brand familiarity from advertising but does not form a distinct attitude toward it. Through constant repetition, the message gains attention and some perceptions sink in; the ads are passively processed with little critical resistance. Then, when a brand item is encountered in a store, it is recognized and purchased on a trial basis. Entertaining and intrusive television commercials are well suited for this type of effect (Krugman 1965).

Market Segments

Responses to advertising differ substantially across various subgroups of receivers. Consumers can be categorized according to sex, race, income level, personality, and social context. The most crucial variable is age, since information-processing abilities and product needs vary through the life cycle. Although developmental capacities differ year-by-year at the younger age levels, it seems most efficient to trisect age level into three broad categories of childhood (up to age 12), adolescence (12–17), and adulthood (18 and older). The presentation of the research literature is organized according to this age breakdown with the greatest emphasis on the voluminous evidence pertaining to children.

Children's Responses to Advertising

This section examines the consequences of children's annual exposure to about 20 thousand television commercials, especially those Saturday morning ads that are targeted to young audiences. The first part assesses the degree of direct impact on product preferences, requests, and consumption. Since most ads promote food products, the next part describes children's learning about nutrition and other food attributes featured in commercials.

Before consumption effects are examined, children's cognitive and evaluative responses to commercials are summarized in terms of affect toward ads, belief in advertising messages, and understanding of commercial content.

Young children generally like to watch Saturday morning commercials, while older children express ambivalent feelings (Atkin 1975*c*; Robertson and Rossiter 1974; Rossiter 1977; Ward 1972). The children especially enjoy humor and other entertaining qualities of television ads.

Inferences regarding children's acceptance of advertising claims depend on the measurement procedure employed. When given a dichotomous forced-choice question on whether ads are true or untrue, the proportion of children who exhibit generalized distrust rises from about one-fourth of the pre-8-year-olds to three-fourths of those over 10 years old (Atkin 1975*c*; Bearden et al. 1979; Robertson and Rossiter 1974; Rossiter 1977; Ward 1972; Ward et al. 1977). Rejection of specific advertisements and persuasive claims, however, is not as prevalent as the generalized measures would indicate. Although children are skeptical about assertions in commercials for familiar toys, they readily accept technical claims of a medical or nutritional nature (Atkin 1975*c*; Haefner et al. 1975). Heavy viewers of commercials are more likely than light viewers to believe ads.

Impact on Desire for Advertised Products.

A number of research projects have sought to determine the role of television advertising in the development of children's awareness of, and preference for, toy and food products. One method is simply to ask children or parents where they learn about desired products.

Donohue (1975) asked black elementary school children to name their favorite toy and tell where they first found out about it; television watching was most often mentioned, followed by seeing it in a store and friends' having it. Caron and Ward (1975) told children to list Christmas gift wishes in a letter to Santa and to indicate where they got the idea for each item. Four sources were prevalent: television, friends, stores, and catalogs. When asked where they would find out about toys and snack foods, about one-third of kindergartners and more than half of the third and sixth graders cited television (Ward et al. 1977).

According to mothers of young children interviewed by Barry and Sheikh (1977), television ranked first as a learning source for products in general, followed by friends and catalogs. Mothers and children studied by Howard et al. (1977) cited television as the most important information source for cereal and toy products.

Children have also been asked to report on the impact of ads on desires. Responding to the question, "Would you like to have most things they show on TV commercials?", two-thirds of the kindergartners and half of the third and sixth graders said "yes" (Ward et al. 1977).

In a correlational survey, Atkin et al. (1979) measured preferences for various food brands in a sample of 5–12-year-olds. There was a strong positive relationship between viewing television commercials and liking the 12 frequently advertised foods ($r = .59$). On the average, 66 percent of the heavy viewers said they liked each advertised product, compared to 46 percent of the light viewers.

There are some experimental studies where one group of children saw a commercial while a nonexposed group did not see any advertising for that product. Atkin and Gibson (1978) found that nine-tenths of the young children exposed to a Pebbles cereal commercial wanted to eat that cereal, compared to two-thirds of the control group. A parallel experiment with Honeycombs cereal showed no significant impact on desire, perhaps because of less effective ad execution.

Goldberg and Gorn's (1978) experiment used a toy commercial with young children. Exposed children were considerably more likely to want to play with that toy rather than play with their friends; indeed, they said they would prefer to play with a not-so-nice child who owned the advertised toy rather than a nice one without that toy.

An experiment with low-income boys between 8 and 10 years old involved exposure to an ad for a new and unfamiliar toy product (Gorn and Goldberg 1977). Compared to a nonexposed control group, those who saw the ad were more likely to have a positive attitude toward the toy and to expend more energy working on a task to obtain the toy.

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In a more extreme experimental test, Resnik and Stern (1977) created a bland ad for an unfamiliar potato chip brand, with no useful information, appealing models, or elaborate production techniques—the message simply communicated the product's existence. When offered a choice between two unknown brands, exposed children were much more likely to choose the advertised potato chips.

Impact on Requests for Advertised Products

Since children do not have the means to buy most of the products advertised on television, most preferences are expressed in terms of requests to parents. Of course, children ask parents to buy a large number of products; the issue concerns the extent to which advertising stimulates these requests.

One method is the self-report of impact, which was employed by Atkin (1975*d*). "Many of the TV commercials are for toys—things like games and dolls and racing cars. After you see these toys on TV, how much do you ask your mother to buy them for you?" Across the 3–12-year-old sample, 28 percent said "a lot," and 55 percent said "sometimes." The same question was repeated for breakfast cereals; 33 percent reported "a lot," and 45 percent replied "sometimes." When mothers were asked to report on requests received, almost identical responses were obtained. Children who watched the most Saturday morning commercials asked much more often, with about twice as many heavy viewers as light viewers falling in the "a lot" category.

In Atkin's (1975*c*) survey of fourth-to-seventh grade students, one-fifth reported that they asked "a lot" for cereals after viewing these products on television. Heavy viewers of cereal advertising made more requests, by a 2-to-1 margin over lightly exposed children. Furthermore, almost half of those who watched television heavily often asked to go to highly advertised fast-food restaurants, compared to one-fourth of light viewers.

The Atkin et al. (1979) survey showed that children who view the most Saturday commercials ask most often for advertised foods ($r = .47$). Summing across nine food products, the investigators found that heavy viewers made almost twice as many request as light viewers.

Galst and White (1976) assessed the extent to which children age 3–11 attended to commercials in a laboratory setting and subsequently observed them in a trip to the supermarket. Children engaged in 15 purchase-influence attempts per shopping expedition; those paying greater attention to ads made far more requests. Request frequency was also moderately related to amount of home viewing of commercial programing but was unrelated to viewing of public television programing. A survey by Clancy-Hepburn et al. (1974) similarly discovered a positive relationship between Saturday morning viewing and frequency of food requests, as reported by mothers of 8–13-year-old children.

Using a projective technique, Sheikh and Moleski (1977) told children to complete a story which began with a hypothetical child seeing several ads for toys, food, or clothing. When asked if they thought the child felt like requesting the item, nine-tenths replied affirmatively. However, only three-fifths said the child would actually make the request, indicating that children use some discretion in expressing desires to parents.

Impact on Rate of Consumption of Advertised Products

Once an edible product is available, the actual consumption rate becomes an important outcome.

Atkin (1975*c*) conducted a survey with fourth-to-seventh grade students. Those who watched the most cereal advertising ate advertised cereals much more frequently; for example, 25 percent of the heavy viewers reported eating Sugar Smacks "a lot," compared to 13 percent of the light viewers. The relationship between candy-advertising exposure and the frequency of eating candy was also moderately strong; for example, 49 percent of the heavy viewers versus 32 percent of light viewers ate Hershey Bars "a lot." Indeed, general television viewing was positively related to consumption of general snack and processed foods (e.g., potato chips, soda pop, hot dogs).

These students were also asked about usage of personal hygiene products and medicines. There was a moderately strong relationship between viewing ads for deodorants, mouthwash, and acne cream and the frequency of using these products; heavy viewers were almost twice as likely as light viewers to say they used mouthwash and acne cream "a lot."

Duesere (1976) discovered that television viewing was positively related to consumption of heavily sugared cereal, candy, snack food, and empty-calorie food as well as between-meal eating. Eating of heavily advertised foods was correlated with viewing in another survey by Sharaga (1974). Atkin et al. (1979) also obtained a moderately positive correlation for candy eating.

Impact of Advertising on Generic Preferences

Aside from the direct effects on preferences for advertised brands, commercials also stimulate greater consumption of other brands within the generic product class. This outcome is explained by social learning theory, which predicts that those who view a behavioral sequence, such as consuming a product, may vicariously acquire new patterns of behavior, strengthen or weaken inhibitions governing the expression of previously learned responses, or be reminded to perform existing response tendencies. This occurs through processes of attention, retention, and motivation generated by exposure to symbolic modeling stimuli, such as television advertising portrayals. The impact need not necessarily be tied to the particular brands featured in the ads; the key factor is the modeled actions, such as eating a certain kind of food.

This can most clearly be illustrated in the case of cereal consumption. Most children have established habitual patterns of behavior regarding cereal eating and have experienced enjoyment and approval of these actions. Advertising can serve as a cue that instigates the previously learned eating response through a reminder function. Such response facilitation is made more likely by the depicted enjoyment of the models in the cereal commercials.

The response might be expected to "generalize" to unadvertised brands for two reasons: The brand-unique cues in a given ad might be perceived as peripheral to the more central modeled sequence of preparing and eating a bowl of cereal, and the overall message environment of numerous competing cereal brands may produce a cumulative impression of "eating cereal" rather than learning substantive and symbolic distinctions between various brands. From a visual modeling perspective, the basic theme conveyed is consumption behavior, since there are often no unique features of specific brands that observers can act out.

To determine whether advertising exposure produces brand-specific or generalized reactions, Atkin (1975*d*) measured consumption of heavily and lightly advertised cereal brands in a survey of fourth-to-seventh graders. Exposure was indexed by attention to specific cereal ads and general attention to such ads, weighted by the amount of Saturday morning viewing time. The correlation between viewing and eating eight highly advertised cereals was strong, with a coefficient of .41. The association was also positive for eating five less advertised brands, although it was not as strong with a coefficient of .27. Thus, advertising does have a clear impact on brand consumption; in addition, the influence appears to diffuse to other brands to some extent.

A different process, disinhibition, seems applicable to candy eating. Saturday morning commercials repeatedly portray models happily consuming a variety of candies, occasionally with the additional reinforcement of tacit adult approval. Yet, candy consumption is considered by children to be a partially proscribed behavior; parental communication and their own common sense typically serve to restrain candy intake through creation of mild inhibitions. Extensive exposure to candy ad modeling stimuli may suggest to the child that excessive candy eating is acceptable behavior by reducing personal guilt or fear of social disapproval. This effect should be reflected in greater amounts of candybars eaten by the child; since inhibitions probably do not pertain to particular brands, the impact should be generalized to all brands, regardless of advertising.

The survey of fourth-to-seventh graders measured candy exposure and consumption in the same manner as the cereal study described above. Exposure correlated .29 with the index of eating heavily promoted brands, and .30 with lightly advertised brands. A similar survey showed correlations of .27 for heavily advertised candies and .23 for lightly advertised brands (Atkin et al 1979). This provides compelling evidence that television ads do influence candy consumption in a generic manner.

Impact of Premium Appeals

Although there is considerable research dealing with the overall influence of advertising on preferences, less attention has been given to the specific message factors that maximize effectiveness.

The type of appeal that has come under closest study is the premium offer that is often featured in cereal commercials. In the mother-child study by Atkin (1975*d*), mothers who reported that their children asked for cereals were asked, "When your child asks for a specific cereal, what does he/she usually say . . . what reasons does he/she give for wanting it?" In response to this open-ended question, 45 percent of the mothers said that the premium was a reason given by the child. An additional 36 percent of the mothers cited premiums in response to a followup query specifically asking about this reason. Mothers mentioned the premium factor far more often than any other motive. The importance of television advertising of premiums can be seen in differences between lightly and heavily exposed children: According to the mothers, 70 percent of the children who viewed an hour or less of Saturday morning ask because of premiums, compared to 86 percent of those watching 2 hours, and 90 percent of children viewing 3 hours or more.

Using a hypothetical choice technique, Reilly (1973) asked children "When you see a TV commercial for a product, would you like to product more if . . . ," followed by pairs of alternatives. More than half of the 6–10-year-olds chose the premium attribute over nutrition, compared to one-third of those between 11 and 15 years old.

Observation of parent-child interactions at the cereal shelf of the supermarket showed that one-tenth of the children explicitly identified the premium as the primary reason for wanting a particular brand (Atkin 1978*a*). A much larger percentage based their cereal selection at least partially on premium considerations. Observers judged that perhaps one-fourth of the children were making their decision primarily on the basis of the premium rather than the cereal itself (based on children's examination of the premium picture on the box), but this motivation was not overtly expressed in interaction with parent. In addition, one-tenth of the cases showed secondary emphasis on the premium; while the premium was mentioned, it was not judged to be a more salient motive than desire for the cereal product. Thus, almost half of the children appeared to take account of the premium in choosing a cereal.

The survey of 5–12-year-old children by Atkin et al. (1976) showed that heavy viewers were more than twice as likely to cite premiums as an important reason for cereal preferences compared to light viewers.

There is also evidence from an experimental test where children watched a television program including a Kellogg's Poptarts commercial (Atkin 1975*a*). Half saw the ad without the premium portion, while the others were exposed to the premium offer. Afterward, children were asked to indicate "why kids like to get" Poptarts; while relatively few referred to the premium in the Poptarts box, almost all of the premium references were expressed if the children had viewed the premium version of the commercial. Those exposed to the premium offer showed a greater desire for Poptarts, as 83 percent versus 72 percent of the nonpremium viewers said they wanted to eat it "a lot." However, this interest was not translated into any greater intention to ask for Poptarts in the supermarket; each group intended to request it at a 77 percent rate.

Conclusions

There is ample evidence that television advertising plays a dominant role in shaping children's product preferences. Both experiments and surveys show how exposure to advertising increases desire, asking, and consumption of advertised products. Children who heavily view television advertising are far more likely to request that parents buy food and toy products for them.

Furthermore, the evidence indicates that advertising stimulates higher usage levels for those consumable products available in the home. There is some tendency for this impact to generalize to other brands in the heavily advertised product category through response facilitation and disinhibition processes; thus, generic consumption is stimulated as well as brand preferences.

Among the message components that may maximize effects, premium offers have been shown to be highly influential. Perhaps the persuasive effectiveness of other factors, such as fantasy sources, emotional appeals, and frequent repetition, is so obvious that researchers have not bothered to provide documentation.

Nutrition Learning From Food Advertising

Not only does food advertising influence food preferences, but it also can shape the basic nutritional beliefs and attitudes of the child. The content analysis research indicates that commercials tend to promote nonnutritional aspects of a limited array of sweetened cereal, candy, and snack products (e.g., Atkin and Heald 1977; Barcus 1978). On the other hand, cereal ads often refer to the importance of a balanced breakfast and occasionally describe vitamin attributes.

Thus, there is the potential for certain effects. Since nutritional aspects of foods are not emphasized, youngsters may make food choices based on nonnutritional criteria that are promoted in the commercials. Specifically, nutrition may not become a salient dimension for evaluating products. In addition, young viewers may develop incorrect beliefs about presweetened products. By contrast, some positive learning may occur regarding the balanced breakfast concept that is mentioned in cereal ads.

Research studies have examined the extent to which children consider nutritional aspects of foods when making a request. For example, Atkin (1975*d*) interviewed mothers of 4–12-year-olds about the main factors affecting children's cereal selection. Just 3 percent said that their child typically expressed nutrition-related reasons in requesting cereals (as reported above, 45 percent said the premium was the most central reason). A followup question specifically asked if the child ever mentioned the nutritional value of a cereal; 16 percent replied affirmatively. There was a slight positive correlation between Saturday morning advertising exposure and citing nutrition when asking for cereals.

In a paired-comparison task, Ward et al. (1977) asked children to indicate the relative importance of nutrition in evaluating foods. By a 70 percent to 25 percent margin, good taste was more salient than nutrition; the prize in the box was rated higher than nutrition by a 50 percent to 40 percent margin, especially among younger children.

Atkin et al. (1979) asked children to rate the importance of various features of food products. Degree of food commercial viewing was moderately related to the importance of "fun of eating" cereal and candy, the premium contained in cereal boxes, and the chewiness and lastingness of candy. Sweetness was slightly more salient for heavy viewers, while viewing was not related to salience of nutrition.

In a laboratory study, Atkin and Gibson (1978) showed 4–7-year-olds an ad for Cocoa Pebbles cereal, where Fred Flintstone and Barney Rubble claimed that the cereal was "chocolatey enough to make you smile." Among the reasons for wanting to eat Pebbles, two-thirds cited the chocolatey taste, three-fifths wanted it because it would make them smile, and more than half desired the cereal because Fred and Barney liked it.

Children do not seem to apply critical evaluation in processing food advertising. Young children tended to accept claims made in four ads identified by the Federal Trade Commission (FTC) as possibly deceptive (Haefner et al. 1975). Sharaga (1974) found that the heaviest television viewers had less correct perceptions of the validity of nutrition claims in food commercials and had lower nutrition knowledge.

A study by Poulos (1975) indicates that the Post Grape Nuts cereal advertising which featured depictions of the edibility of wild vegetation led to misperceptions by 5–12-year-olds. After viewing the commercial, children were more likely to rate similar-appearing toxic plants as edible.

Atkin and Gibson (1978) presented a cereal ad featuring a circus strongman lifting a playhouse and eating the cereal. Almost two-thirds of the 4–7-year-old children thought that the cereal would contribute to their own strength, including one-third who said that the cereal would make them strong enough to lift really heavy objects. Those who frequently viewed Saturday morning cereal advertising at home were much more likely to express the beliefs concerning strength than those who were not heavily exposed.

These 4–7-year-olds were also asked how much Fred Flintstone and Barney knew about nutrition; one-third thought that the cartoon characters knew "very much" about which cereals children should eat. Heavy viewers of cereal ads were far more likely to attribute credibility to the animated figures.

The 5–12-year-olds surveyed by Atkin et al. (1979) were asked about the competence of Cookie Jarvis as a source of cereal information; one-third of the heavy viewers versus one-tenth of the light viewers thought this character was knowledgeable.

By promoting the strength or energy benefits of foods, advertising may lead children to believe that these products have more nutritional value. Atkin et al. (1979) found that, compared to light viewers, children who heavily viewed food ads were twice as likely to say that sugared cereals (e.g., Honeycomb) and candies (e.g., Three Musketeers) are highly nutritious.

Since these ads typically omit references to the cavity-producing qualities of sugared foods, children may not realize that these products pose dental risks. Indeed, the study of 4–7-year-old children showed that less than half realized that presweetened cereal was more cariogenic than a nonsweetened cereal, and none thought presweetened cereal was riskier than cake (even though the sugar content by weight is greater in each case). In the study of 5–12-year-olds, three-fifths believed that presweetened cereals are cariogenic; heavy viewers were somewhat less likely to hold this view (Atkin et al. 1979).

Conclusions

Among the factors that children weight in selecting cereals, nutritional value does not seem to be important. There is some evidence that children are persuaded to want the cereals for nonsubstantive reasons—character endorsements, toy premiums, and chewiness—which are the types of appeals featured most prominently in advertising.

Some findings suggest that children's beliefs about the nutritional value of various foods and sugar are shaped by advertising. In general, children are not critical evaluators of claims made in food advertising; they tend to accept the validity of strength benefits and attribute competence to cartoon sources.

Adolescents' Responses to Advertising

Researchers investigating the adolescent-age group have considered a broader range of advertising effects; the evidence is grouped according to cognitive, affective, and behavioral responses. Almost all of this research has been survey rather than experimental, typically involving self-administered questionnaires with large samples of middle school and high school students. One methodological weakness in most of these studies is that advertising exposure is not measured directly; the investigators simply measure total hours of viewing television or watching various categories of programs. While this may serve as a crude indicator of opportunity for attending to ads, sheer quantity of viewing also reflects exposure to a large variety of unmeasured stimuli which may or may not be relevant to consumer socialization. The only measurement of actual advertising exposure and attention levels occurs in the survey studies of drug-advertising effects (Atkins 1978) and alcohol-advertising effects (Atkin et al. 1980).

At the cognitive level, acquisition of brand awareness has been examined most thoroughly. Knowing brand slogans is negligibly related to television viewing in two surveys (Moore and Stephens 1975; Moore and Moschis 1978), mildly related in another (Ward and Wackman 1971), and moderately related in one survey (Moore and Moschis 1979). In a study of alcohol advertising, actual viewing of ads was strongly correlated with awareness of the slogans, symbols, and content presented in these commercials (Atkin et al. 1980). There is a similar pattern of mixed findings for teenagers' ability to link brands to appropriate product categories (Robertson et al. 1979; Moschis and Moore 1978; Moore and Stephens 1975; Moore and Moschis 1979). No relationship has been found between exposure and accurate knowledge of product prices (Atkin et al. 1980; Moschis and Moore 1978; Moore and Stephens 1975). Atkin et al. (1980) reported a moderate association between alcohol-advertising exposure and general knowledge about beer, wine, and liquor (e.g., proof levels and ingredients).

Adolescents' images and perceptions of the typical consumers of various brands and products have also been studied. To a modest extent, heavy viewers think that more people need or use highly advertised products such as proprietary medicines (Robertson et al. 1979; Atkin 1978), mouthwash and deodorants (Atkin 1975*c*), and alcohol (Atkin et al. 1980). There are also mild positive associations between exposure and holding the belief that medicine and hygiene products are effective (Robertson et al. 1979; Atkin 1978; Atkin 1975*c*).

A variety of affective responses have been investigated. General materialism (defined as an attitude emphasizing the importance of material possessions and money as a means to personal satisfaction and social progress) is correlated with viewing to a slight extent (Ward and Wackman 1971; Atkin 1975*c*; Churchill and Moschis 1979; Moschis and Churchill 1978). A measure of conspicuous consumption attitude also shows a modest positive relationship (Moschis and Churchill 1978).

Another affective response is anxiety about the need for certain types of products. Exposure is moderately related to illness anxiety (Robertson et al. 1979; Atkin 1978) and to concern about personal hygiene (Atkin 1975*c*).

The most pertinent affective variables involve liking for advertised brands and approval of advertised products. Highly exposed adolescents tend to express preference for advertised brands (Moschis and Moore 1979; Moschis 1978); one example is the positive relationship between watching beer and wine commercials and citing those brands as favorites (Atkin and Block 1979). In the only experimental test, Atkin (1975*b*) showed an acne cream commercial to young adolescents, while a control group remained unexposed; liking for the brand was significantly higher among the exposed group. Aside from brand preferences, television ads lead to more accepting attitudes regarding the practice of using certain restricted products, such as alcohol (Atkin and Block 1979) and proprietary drugs (Robertson et al. 1979; Atkin 1978).

In terms of actual consumption behavior, the evidence again shows the effectiveness of advertising. Atkin and Block (1979) found a moderate association between beer commercial viewing and consumption of beer, although the correlation for wine was somewhat weaker. Both survey and experimental research indicates a moderate relationship for hygiene products such as deodorants and acne cream (Atkin 1975*b*; Atkin 1975*c*). Ward and Robertson (1972) discovered that half of the teenagers sampled said they had purchased consumer goods as a result of seeing a commercial. On the other hand, Moore and Moschis (1978) reported no relationship between exposure and the proportion of available money spent on consumer goods or the motivation to work to get spending money. The least impressive data come from the extensive literature on usage of proprietary drugs, which is only marginally related to exposure (Robertson et al. 1979; Atkin 1978; Milavsky et al. 1975–76). However, Robertson et al. do report that viewing is moderately correlated with requests to parents to use these drug products, which may be the more sensitive response variable in this case.

In conclusion, these findings suggest that television advertising has a distinct but hardly overwhelming impact on the cognitions, attitudes, and behaviors of adolescent consumers. The greatest effects occur for learning about brands, while the attitudinal influence is more limited. The evidence is mixed for purchases and usage, but studies measuring actual advertising exposure tend to demonstrate the strongest influence.

Adults' Responses to Advertising

There is little doubt that adult-oriented advertising has a strong impact on such cognitive factors as awareness, knowledge, and name identification. For example, half of the public was aware of Crest toothpaste's endorsement from the American Dental Association within 2 weeks after it was announced in their advertising (Bogart 1967); more than half of the public knew the heavily promoted slogans of United Airlines, Budweiser beer, and General Electric (Larson and Wales 1970). In the only study attempting to directly link advertising exposure to brand awareness, Atkin et al. (1980) found that viewing and reading alcohol ads correlated strongly with knowing the brand names, slogans, symbols, and themes of beers, wines, and liquors.

Since sales rather than positive attitudes are the bottom line for advertisers, most of the investigations have focused on purchase behavior. Several surveys have demonstrated mild to strong positive associations between advertising exposure and purchases of the advertised items (Benson 1967; Atkin 1962). Aggregate analyses indicate that brands backed with the most advertising dollars tend to achieve the highest sales (Sexton 1971; Peles 1971). However, it is difficult to infer causality from these correlational and aggregate associations.

Field experiments present a more precise methodological approach. In tests where certain markets are randomly assigned to higher levels of advertising, sales response has been shown to be somewhat higher (Ackoff and Emshoff 1975; Bechnell and McIssac 1963; Ule 1966).

Nonadvertising Television Content

While television commercials provide the most relevant consumer messages, several other types of television content also have interesting implications. A small amount of empirical research has focused on public service announcements (PSAs). PSAs have been shown to effectively influence children's attitudes and behaviors regarding nutrition and food consumption (Goldberg et al. 1978; Atkin 1975*a*). Anti-drug use PSAs have not achieved much persuasive impact (Ray and Ward 1976; Smart and Fejer 1974).

It is also likely that some impact results from economic stories and consumer advice segments in news programs and from "educational" television series such as Consumer Survival Kit, but no research is available for these informational messages.

In the realm of television entertainment, the most explicit consumer content occurs on game shows which feature substantial prizes of money and material goods. Contestants on these programs typically express exhaltation as they win luxury automobiles, boats, jewels, trips, appliances, furs, and large sums of money, while the studio audience cheers appreciatively. It is possible that such avaricious displays may engender desires for the featured consumer goods or heighten materialistic orientations. Similar effects may result from the generally upper-class lifestyles and conspicuous consumption portrayed in dramas and situation comedies. In addition, the audience may obtain guidance or inspiration as they watch more modest television families such as the Waltons or Bunkers as they cope with money problems or consumer decisions. Since no empirical evidence exists, such effects must remain speculative at this time. Certainly, future research efforts should move beyond advertising to explore the consumer impact of informational and entertainment messages on television.

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Growing Old on Television and With Television

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Television researchers historically have given considerable attention to the viewing habits of children and adolescents but only occasionally to those of adults. Even more neglected, until the past decade, were the habits of persons 65 and over. That television researchers have only recently become interested in this population is not surprising. After all, the elderly are often neglected even by their own families.

The topic of television and aging is of particular interest because of two striking facts which, when considered together, are rather ironic. First, older people watch a great deal of television (more than any other age group, including children), and second, older people are infrequently seen on the television screen itself and are often portrayed negatively. The potentially negative consequences of such a conflict-laden viewing situation are of considerable concern. Here is a population, which is often mistreated and neglected, resigned to a dependent relationship on an information medium which tends to ignore and malign them every bit as much or more than the "real world."

Television in the Lives of Older Viewers

Time Spent Viewing

There is virtually universal agreement that television is of considerable importance in the lives of older people. Glick and Levy (1962) categorized the elderly as "embracers" of television. To be an embracer signifies "a particularly close identification with television, a rather undiscriminating and accepting attitude toward it, and usually, great use of the medium."

Classification of the elderly as avid television viewers is well supported by research. DeGrazia (1961) questioned older people regarding their daily activities and found that the activity of "watching television" was the most frequently reported. In a similar survey of 5,000 Social Security beneficiaries in four areas of the United States, Schramm (1969) found that the most frequently named daily activity was watching television.

Other researchers have found that television viewing is not only a frequent activity among the aged, but also that such activity increases with age (Bogart 1972; Bower 1973; Chaffee and Wilson 1975; Doolittle 1977; Hoar 1961). Even in the early years of television, Ripley and Buell (1954) reported a direct correlation between age and hours per day spent viewing television. There was an increase from 2.35 hours daily for men 19 to 30 to 3.15 hours for men over 61. Similar increases were observed for women.

Nielsen ratings estimate that men over 50 watch an average of 1 hour of television more per day than men 25 to 49. The increase for women over 50 is even higher; their average for 1976 was 35 hours of viewing per week. Other studies have gone into greater detail showing that individual viewing time increases until age 70, then declines as the viewer moves into advanced age (Harris and Associates 1975; Steiner 1963).

In general, older people tend to view in increasing numbers as the day goes on, but their prime time peak occurs earlier than it does for the general public, whose peak time is around 8 p.m. and lasts until 11 p.m.; older viewers tend to peak and diminish an hour earlier (Davis 1975*b*). These viewing times naturally reflect program preferences as well as an earlier bedtime for many older people.

Preferred Content

News and Public Affairs. Every study of program preferences of the older viewer reports that the program types most consistently viewed are news, documentaries, and public affairs (Bower 1973; Davis 1971; Korzenny and Neuendorf 1979; Meyersohn 1961; Steiner 1963; Wenner 1976). To explain the aged's preference for nonfictional programing, Kubey (1980) says that television may help substitute for the information network that existed in years gone by when the individual daily went out into the community to work. Comstock et al. (1978) group the aged along with the poor and with ethnic minorities into the category of "disadvantaged." This group, they say, depends on television more than any other news medium for knowledge and information.

Other Program Choices. Surveys show that, in addition to news and information, variety shows, musical specials, and travelogues are rated highly by older viewers (Adams and Groen 1974; Bower 1973; Danowski 1975; Davis 1971). Particularly in light of the relative dearth of older characters on television, the few programs featuring positive older role models are popular with older viewers (Meyersohn 1961; Parker et al. 1955). Harris and his associates (1975) found that personalities such as Bob Hope, Lawrence Welk, and the scripted performance of "Grandpa and Grandma Walton" were most favored.

A major contribution to the viewing pleasure of older people is daytime soap opera. Barton (1977), in opposition to popular opinion, credits soap operas with playing an important and potentially positive role in the lives of older people. In addition to presenting opportunities for vicarious emotional experiences, such programs also offer common experiences and "serve as a substitute for the traditional community gossip networks which become fragmented as the elderly family structure and living conditions undergo change."

Functions of Viewing

The functions of television in the lives of older viewers vary, but the specter of dependency is of greatest concern to gerontologists (Bower 1973; Davis 1971, 1975*b;* Glick and Levy 1962; Kubey 1980). A detailed study by Schalinske (1968) found older viewers to be so dependent on television as to be uncritical of content, even while expressing some alienation as a result of the medium's orientation to young viewers. Feelings of helplessness may also accompany elderly persons' experiences with television when they try to correct flaws in reception or tune in a UHF station.

Davis (1975*b*) elaborated on the dependency issue by listing four potential benefits of television accruing to the older viewer: involvement, companionship, structuring time, and filling time. Involvement in the mainstream of life is facilitated by television because it is thought to tap a common pool of knowledge (Glick and Levy 1962).

The general sensory decline which often attends aging is also responsible for increased dependence on television. Reading may be restricted by failing eyesight, and hearing impairment may limit the use of radio. Television, because it provides both auditory and visual information simultaneously, allows an older person to fill in perceptual gaps that might otherwise have been missed. Doolittle (1979) found that viewing of news is highest among those elderly who have the least social interaction.

The easy accessibility of the television receiver may encourage the older viewer to regard television as a beneficial source of companionship (Meyersohn 1961; Glick and Levy 1962). Isolation also contributes to an older person's dependence on television for a supply of fictional companions (Schalinske 1968; Schiffman 1972). Davis (1975*a)* noted that "television provides safe, nonthreatening companionship" and that some older people experience "fairly intense friendships" with television characters.

Danowski (1975) hypothesized that personal and mediated communication patterns are inversely related over the lifespan. The very young and the very old are more dependent on television as a substitute for personal communication and possibly as a function of their time not being burdened by the raising of children (Bower 1973). Hess (1974), Gregg (1971), and Peterson (1974) all hypothesize that television viewing for the elderly is a parasocial activity which allows isolated older persons to maintain the illusion of living in a populated world.

Meyersohn (1961) suggests that a major effect of television is that it offers a convenient schedule for marking off time. The unstructured day of many retired people may be given meaning when it is organized around the television program schedule (Davis 1973). This is borne out by Schalinske's (1968) work that showed how rigid and routine behavior patterns of many older subjects found a focus in television program schedules. It has also been observed that activities in senior citizen communities have had to be scheduled around favorite television programs, especially daytime soap opera (Isenberg 1977).

Then, there is the function of filling time. Cassata (1967) claims that viewing rises most with retirement because people simply have more time to view. "Killing time," according to Robinson (1972), is the predominant rationale for viewing. Robert Butler, director of the National Institute on Aging (NIA), observed that, "Television is a way of killing time until it kills you." Finally, Christensen and McWilliams (1967) suggested that television is beneficial for the dependent older viewer simply because it is "doing something" as opposed to "doing nothing."

Both the functions of viewing and the viewing habits of the elderly do appear to vary partially as a result of activity level, health status, and losses which often attend the aging process (Wenner 1976). Viewing is clearly more indiscriminate for the more isolated and widowed populations than for those who are still married and socially mobile. Furthermore, many older viewers appear to prefer programs which fill gaps left by the isolation of old age. Frank and Greenberg (1979), for example, found that older women sought out television programing which emphasized "family solidarity" or offered "vicarious participation in a family."

Stereotyping and Underrepresentation

Television, through stereotypic characterizations, tends to perpetuate myths of old age. The "dirty old man" and the "little old lady from Pasadena" have earned places in storytelling repertoire. In the brief time allowed to tell a story on television, stock characters are useful because they do not have to be filled out as multidimensional personalities. The audience is already familiar with their characteristics, so time is not needed to flesh them out. Stereotyped old women and men lack dimension in television narratives because the storytelling is made simpler (Davis 1975*b*). Stereotypical characterizations of old age do not reflect reality and are often communicated all too dramatically by commercials and character roles on television. The protrayal of older people by the media, then, is among the most immediate concerns of gerontologists (Carmichael 1976).

In one study, Mertz (1970) analyzed 519 television programs to assess roles played by older persons. He found that not only were older people underrepresented, but 82 percent of the elderly role portrayals fell into stereotypical characterizations.

The Mertz research confirms findings of other content analysis studies. Hacker (1951) asserts that the lower the status of a group, the lower the visibility of that group on television. Further, when that group is visible, the less favorable the image projected. Following the Mertz work and again testing the Hacker assertion, Petersen (1973) conducted a content analysis of television programing and discovered an underrepresentation of older people in programs when compared to their numbers in the real population. Even though there are more older women than men in our country, Petersen's study showed that older women on television were greatly underrepresented in comparison with older men. This underrepresentation in Petersen's study suggests that a viewer could expect to see an old man on prime time television every 22 minutes and an old woman only every 4 to 5 hours. Arnoff (1974) made an analysis of 2,741 characters in prime time network television drama sampled between 1969 and 1971. He found that old men outnumbered old women 3 to 1. Such percentages reflect an apparent conviction within the television industry that interesting things happen only to the young, especially men.

Much of the subject matter in prime time programing is action, violence, romance, and comedy. When the elderly appear in these program types, they are often portrayed as victims or villains: Aronoff plotted curves showing the frequency of "good guys" and "bad guys" on television as a function of age. These curves demonstrate that the chances of male villainy increase with age. The young adult is most likely to be the "good guy" and, as he ages, he moves into the "bad guy" category. Female characters fare even worse. Aronoff states:

> In television drama, females age earlier and faster than males. . . . But while most males in prime time drama fail because they are evil, females fail just as they age. Elderly female characters actually fail more often than they succeed. Aging in prime time drama is thus associated with increasing evil, failure, and unhappiness. In a world of generally positive portrayals and happy endings, only 40 percent of older male and even fewer female characters are seen as successful, happy, and good.

In a 1974 study, Northcott directed a content analysis of prime time drama where role portrayals lasted 2 minutes or longer. Of the 464 portrayals analyzed, only seven, or 1.5 percent, appeared to be over 64 years of age. Real-world statistics indicate that 11 percent of the population is over 64. Northcott summarizes his findings:

> How then do the aged see themselves portrayed on television? First of all, they see themselves represented only infrequently. Second, when the aged do appear they tend to be seen in contrast to the predominant attractive and often youthful adults. . . . Third, the aged, similar to the young, tend to see themselves portrayed as suffering more than the average share of problems and relying for help on the "competent" adult. Finally, dialogue tends to negatively evaluate both youth and age. In short, television idealizes vigor, competency, and attractiveness. It is undesirable to be either "too young" or "too old."

Harris and Feinberg (1977) collected data on frequency and type of characterization of the elderly on programs selected on a random basis over a 6-week period from among all 7 days of the week, from 8 a.m. to 12 midnight over the three national networks. Older characters were most often seen on comedy shows and on news and talk programs. No romantic involvement whatsoever was described for characters over 60.

Surprisingly, a respectable percentage of older characters were shown in moderate-to-high physical activity. Images of older adults as physically active were also found in Petersen's research. Kubey (1980) explains images of relatively high activity in old people on television as the function of a "reversed stereotype."

> A reversed stereotype refers to older characters seen riding motorcycles, performing modern dances with great abandon, or referring to their prolific sex life. Such images are, of course, intended to be comical because they conflict with strongly-held stereotypes of lethargy and libido loss among the aged. . . . Reversed stereotypes probably do more harm than good because the viewer understands that such images of the elderly are meant as jokes and the true negative stereotype is thereby reinforced.

Not only in drama and situation comedy are older people rarely seen. Levinson (1973), investigating the population of children's television cartoons, found that only 4 percent of the characters could be described as old. Danowski (1975) analyzed game shows, a program type, ironically, that frequently is indicated as a favorite of the older viewing audience. He found not only that older people are rarely contestants but also that they are not even in view when the camera pans the studio audience. They are often seated in the rear of the audience.

Old characters tend to be portrayed in a manner that reflects societal attitudes about age. As men age, they often exhibit more authority and are esteemed by others. Men, it seems, are permitted to age. Francher (1973) notes that in some television roles the image of males is enhanced by age: gray temples and a wrinkled face. Aging women, however, are not so valued.

On the other hand, Petersen (1973) found in her study that the majority of older characters were "active," "in good health," and "independent." Older women are often portrayed positively in soap opera programing (Ansello 1978; Barton 1977; Downing 1974; Ramsdell 1973). These studies indicate that elderly women appear more often in this genre than in any other and that their roles are stronger (that is, they are seen as more independent and as being sought-after advisers to younger women).

Harris and Feinberg (1977) have shown that the older male enjoys an esteemed and authoritative position on news and talk shows. Where the soap opera offers the most positive characterization of older women, the serious news format presents the most positive characterization of the older male.

The most recent and comprehensive analysis of the image of aging on television to date is the study by Gerbner and his associates (Gerbner et al. 1979). This study includes a content analysis of prime time programs for the years 1969 through 1978.

Signorielli and Gerbner (1977) analyzed over 9,000 characters and found that only 3.7 pecent of major and minor characters were elderly (age 65 plus) and that they were portrayed as comparatively unattractive and unhappy. The authors also conclude that the image of the elderly did not change significantly in the first 5 years of the 1970s; more importantly, fewer elderly characters were seen in each of those years.

In studying personality characterizations, the Gerbner study (1979) found that older characters are more likely to be treated with disrespect and are less likely to play serious roles. However, two positive characterizations did emerge from this content analysis: Loneliness among the elderly is less common than among other age groups, and most elderly characters are portrayed as useful.

Of most concern to Gerbner is the fact of underrepresentation. The authors suggest that viewers are likely to learn from television that old people are either insignificant or disappearing. Viewers are also led to believe that old people live alone, are not romantically involved, are sexually inactive, are rigid and closeminded, not bright or alert, and are inept and bumbling. It is theorized that those who do not view television heavily are less likely to reach these conclusions, since the television world does not become part of their "reality base." Let it be noted, however, that Gerbner's findings and conclusions represent the most devastating attacks on the television image of old people, and it should be recognized that other researchers have been somewhat more moderate in their assessment of the quality of this image.

The Future: Promises and Hope

Commercial broadcasting ought not to knowingly alienate a significant percentage of its viewers. FCC regulations require that stations be operated in the public interest, and, as the elderly are a major and growing part of the public, their needs must be met by law.

In the last 3 years, hearings on age stereotyping in the media have been held by the U.S. Senate Select Committee on Aging of the House of Representatives (*Age Stereotyping and Television*, September 8, 1977; *Televised Advertising and the Elderly*, January 26, 1978; *Media Portrayal of the Elderly*, April 26, 1980). Recommendations on regulatory action have been deferred. As is so often the case in communications issues, it is difficult to determine when regulatory restraint might constitute censorship.

Although research indicates little reason for optimism about change toward more positive depictions of the elderly (Hess 1974; Schramm 1969), Davis (1980) has noted improvements in prime time programing in the numbers of older persons visible on the television screen and in the increased willingness to confront issues of aging as subject matter in all kinds of programs.

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Changes in programing will occur as a result of the growing elderly population and its growing purchasing power. Changing demographics are slowly being reflected in the new product lines of many major companies who, for the first time, are realizing the value of targeting older consumers. Ogilvie and Mather (1976), for example, have reported that people over 65 represent a market in excess of 60 billion dollars and have the second highest per capita income of any age group (the highest being the 45–64 year category).

We can expect, then, to see the most immediate improvements in television commercials where old people have fared quite badly in the past (Doolittle 1977; Harris et al. 1975; Hemming and Ellis 1976; Salmi and Palubinskas 1962). Harris and Feinberg (1977), for example, found that older characters viewed in television commercials were 10 times more likely to have a health problem than were the other adult characters. More recently, Jamieson (1978) reported that the number of old people in commercials jumped from 3 percent to 14.1 percent between January and October of 1978. Whether this trend will hold remains to be seen.

Historically, there have always been some positive characterizations of old people in television commercials. The advisory function of older people, especially women, for example, is noted as a positive characterization as are the cases of older men exhibiting characteristics of authority and wisdom, validating the genuineness of a product (Hess 1978).

Advertising Age (1977) estimated that people over 50 spend 121 million dollars annually on hair shampoos and conditioners. This resulted in the writing of special advertising copy to promote a product labeled "New Seasons," the shampoo conditioner designed "to meet your special needs" if you are over 50. It is an unabashed pitch to the older market.

It should be remembered that television sells *audiences* to advertisers and bases charges per thousand viewers and on the age of those viewers. The cost is roughly $4 per thousand for the group over 60 years, and $10 to $12 per thousand for the group 18 to 49 (Davis 1980; Kubey 1980). Thus, even if a television program receives good ratings, it may be considered a failure if it is drawing an older audience. It is debatable, however, whether the older viewer should truly be considered a less economically "valuable" audience member. Paul Kramer, a research associate of CBS, has called for more research into the marketing value of various age groups; he believes that the data currently used by the industry are 20 years old (Scott 1977).

In other programing, there are signs that the situation is changing. Experienced and therefore "bankable" performers are themselves aging. Aging and its consequences, including death, are now stable fare for at least one segment of each dramatic and comedy series each season (Davis 1975*a*; 1980).

Television will continue to grow in importance as an environmental influence, and it will continue to be a significant influence in the lives of older people. The future aged, regardless of lifestyle, will continue to watch television (Havighurst 1975). As industry and the television medium attend to the demographic shifts in our society, programing will reflect a new awareness. No industry can afford to ignore potential customers.

Television as an Influence on Aging

Figures vary slightly, yet it is safe to say that almost 11 percent of the total population of the United States is age 65 or older. At the same time, the number and percentage of old people are growing at a rapid rate. One might expect the television medium to be more aware of old people as their numbers grow. But is this the case? Television, as has been seen, does not accurately reflect the real world.

As a source for social models, television is often thought to exert the most powerful influence of all mass media. The National Council on Aging offers the position that television is the channel through which elimination of ageist stereotyping must occur (Landres 1978). Television is, after all, the single most important source of information for most people (Roper 1979). If old people are not visible on the television screen, and if their presence is often a fanciful depiction of being old, then what is the message to viewers, both old and those not yet aged?

Shinar and Biber (1978) have shown that a critical and negative image of aging is more likely to be held by younger and older respondents than by those in midlife, and it is these two groups who watch the most television. Children, who experience a significant amount of exposure to television in comparison with other activities, have been found to harbor negative attitudes toward the aged as early as age 8 (Hickey et al. 1968). Furthermore, it is conceivable that television will have an even greater impact on the future aged than on those who are currently elderly who were not raised with it as an early environmental influence (Kubey 1980).

Unfortunately, the role of television in the adult socialization process has been left virtually unstudied. Comstock and his colleagues suggest that since television is a primary source of information for old people especially, it would have an appreciable influence on their values and behaviors (Comstock et al. 1978). We know that television can influence adult consumer and voting behavior and that it may have some bearing on adult mood states (Gorney et al. 1977; Kubey 1978), but exactly how television operates as an agent of socialization in adults is far from clear.

Although there have been an increasing number of television dramas, documentaries and series dealing with issues in aging, there is little evaluation research to measure the impact of these programs. *Over Easy,* however, the best known series, has generated some evaluative research to measure its effectiveness (Keegan 1978). This research has shown that the program often results in increased awareness of community services and an increased politicization of the viewers. An informal analysis of mail received indicated an increased level of awareness with resultant advocacy stances on the part of viewers.

Change of attitude toward the elderly was measured in viewers who had seen one episode of another public broadcasting series, *Getting On,* in 1976. According to the survey, the program caused older people to feel better about their peers; and most especially, it resulted in younger people substantially revising their initial negative assessment of the elderly (Lieberman Research 1977).

Young people's attitudes were also found to have changed significantly in a positive direction in research conducted for the PBS *Prime Time* series in 1978 (Davis and Fleisher 1979) with measures taken before and after viewing one segment of the series.

Television is not the only instrument of change in our society, but the emphasis on the supposed power of television often leads to an assumption that it is the sole determinant. Greenfield (1978) argues for a balanced view of television's place as an instrument of societal change, suggesting that other media indulge in content of quality of the same level or lower than that of television. Calhoun (1978), for example, has made a careful historical study of the media's attention to the old in America since 1945 and is impressed with television's contribution, arguing that it has been superior and more responsible than that of radio or film. Still, a principal concern is that for some people, especially old people, the *only* source of information and entertainment is television.

Television has been charged with the responsibility for the homogenization of our society. If this is so, it may be due in part to the promulgation of established (and therefore comfortable) values in the creation of television program content. The value systems promoted are more often reflections of what exists or of cultural myths rather than introductions of radical change (Davis 1978; 1980). Those values repeatedly reinforced by television are self-reliance, work, physical beauty, planning for the future, and mastery over nature. Such precepts are, according to Davis, "disadvantageous to the elderly, who, in general, are dependent, have reduced or no market value, are not young and firm, have a limited future, and obviously have not controlled nature."

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Television and Sexual Learning in Childhood

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While no study has examined the impact of television on a child's sexual learning per se, research indicates that several characteristics of the medium and the messages make it likely that television affects a child's sexual socialization: (1) the adult nature of most programing children watch; (2) children's limited access to or experience with countervailing information and/or ideas; (3) the "realism" with which roles, relationships, and lifestyles are portrayed; and (4) the overwhelming consistency of the messages about sexuality that are communicated.

Although children watch a lot of television, most of it of their own choosing, they are *not* the intended audience of most programing. Because television is principally designed for older audiences, programs frequently deal with aspects of life which, in other environments, would be considered off limits to the child, particularly the many dimensions of sexuality.

Television viewing, especially when it is uncontrolled, allows children to explore, at least vicariously, ambiguous and even "forbidden" aspects of life. Given the embarrassment, anxiety, or even anger that may characterize the response of an adult to a child's sexual inquisitiveness, television may seem to the child a relatively secure environment from which to glean insights into the meaning of sexuality in adult life.

Furthermore, children have limited access to alternative sources of information which would enable them to put television's messages into perspective. Adult viewers are presumably sophisticated in the ways of the world, cognizant of differences between reality and fantasy, and aware of the commercial purposes of television. But for the young viewer, the content of televison is often far different from anything else in a limited life experience. The boy or girl who is still in the process of developing cognitive and social skills may not adequately assess and evaluate what is seen on television.

In areas related to sexuality—specifically those relating to the meaning and context of erotic feelings and behaviors—this lack of alternative sources of information is particularly pronounced. Even if the child or adolescent were motivated to seek other attitudes, insights, or information about sexuality, the paucity of available sources would be a stumbling block. Most adults shun discussion of sexual topics. The well-worn pages of the few juvenile books that do address the sexual interests and concerns of young people highlight the lack of diverse, meaningful, and systematically available literature about sexual roles, relationships, behavior, and lifestyles.

Another characteristic of television programing is the fact that the sexual values and attitudes are usually presented in programs that seem remarkably "real." While most of the programs children watch are fictional, time, money, and skill are spent by the programs' creators in locating the action in realistic settings and portraying the actors in situations that seem true to life. Thus, televison's programs present seemingly realistic information about human relationships, about the consequences of given behaviors and attitudes, and about appropriate emotional states that occur with or after given events. The realism of the sexual roles, relationships, and lifestyles portrayed on television increases the likelihood of social and emotional identification on the part of the child (Greenberg 1974).

Adding to television's potency as a sex educator is the overwhelming consistency in sexual values and attitudes communicated on entertainment programs. Television's impact on a child's values or behaviors is rarely the result of a specific scene or an individual program. For the most part, the impact of television occurs as a result of messages received from many programs over time. On television today, most of the images of sexual life are similar. This underlying consistency, particularly when there is enough variation around a central theme to permit the isolation of a general rule or principle, makes it all the more likely that a child will learn from what he or she observes on television (Himmelweit and Bell 1980).

From the perspective of many mothers and fathers, television has become a more influential educator about sexuality than teachers, ministers, physicians, or relatives. Parents even think that television is more important than peer communication in affecting their children's learning about sexuality. In a report of parent-child communication about sexuality (Roberts et al. 1978), about 50 percent of the 1,400 mothers and fathers interviewed stated that they thought their child learned most about sexuality from television.

This view was especially evident among parents who were themselves the highest viewers of televison. A "high viewer" was defined as watching between 27-35 hours a week. These high viewers were frequently younger and had less formal education than "low viewers." Despite this overwhelming recognition of television's impact on their children's sexual learning, most parents had little faith in the accuracy or reliability of television's sexual content. Again, a far greater proportion of high television viewing parents than low viewers said they believed television to be an accurate source of information about sexuality for their child (Roberts 1980).

In families where one or both parents watched a lot of television, viewing was commonly a family event, and there was some suggestion that parents who watched a lot of television were less likely to talk with their child about sexuality (Roberts 1980). However, so few parents discuss sexual issues with their child that it is difficult to measure the relative importance of television viewing in this process. In those families in which the mother and/or father views between 4-6 hours of television each day, there probably is not much opportunity for parents and children to discuss anything, especially issues as complex or value laden as those related to sexuality. Thus, as television consumes family interaction time, it limits opportunities for the child to learn from the parent. In addition, parents who viewed a lot of television were more likely (than low-viewing parents) to believe that sexual issues should not be discussed outside the family, in all likelihood further reducing their child's access to alternative sources of information and insight about sexuality (Roberts 1980).

In brief, the findings suggest that younger parents with younger children and parents from lower social economic groups with less formal education are likely to watch more television than older parents or parents with a college education. In the homes of these high viewers, family life is characterized by more joint family viewing time and less parent-child conversation about sexual issues. Conversations, if they do occur, often are prompted by something seen on television. These viewers are more likely to see television as a medium which presents accurate and reliable information about sexuality and to disapprove of discussing sexual issues outside of the family.

In light of this substantial evidence regarding the potential of television's impact on a child's sexual socialization, it is reasonable to concern ourselves with the curricula being offered by this electronic sex educator. Although there has been no comprehensive content analysis of television's sexual content, there have been several studies which analyze television content in various interrelated and critical areas. Selected content analyses are summarized in table 1. In the next section, the findings from these studies have been integrated and discussed within the context of five dimensions of a child's sexual learning.

Television's Sexual Curricula

Most discussion of television's sexual content has focused on television's portrayal of "physically intimate behavior" or the treatment of a particular story or sexual theme. Both on and off the television screen, there is a need to expand our understanding of sexuality. Human sexuality is part of one's basic identity. It encompasses our total sense of self as male or female. It involves attitudes, values, feelings, and beliefs about masculinity and femininity. It includes how we feel about our physical selves—the limits, the joys, and the embarrassments of our bodies. It is the integration of needs for affiliation and intimacy and expressions of love and affection, as well as fears, fantasies, and decisions regarding erotic conduct. Human sexuality is expressed in our full range of interactions with others.

Just as it is difficult to separate sexuality from the rest of our lives, it is difficult to isolate television's sexual content from the rest of programing. Sexuality on television encompasses more than a special on adolescent pregnancy, the double entendre of a variety show, or the VD theme of a situation comedy. The themes, settings, storylines, characterizations, and interpersonal dynamics portrayed on television provide insight into what it means to be a man or a woman in our society, how affection and intimacy are expressed, how erotic conduct fits into daily life, how men and women arrange their personal and professional relationships, who is treated with respect, who with disdain, what values are trivial, and which are important.

To understand more fully the nature of television's sexual messages and their possible impact on a child's learning, five content areas relevant to sexual socialization are examined: gender roles; body images;

Table 1

Selected Content Analyses

Research Study	Sample	Major Variables	Major Findings
C. E. Aronoff. Sex Roles and Aging on Television. (unpublished study) mentioned in *Journal of Communication*, 24(2), 1974, p. 124.	2,125 male and 749 female dramatic (noncartoon) characters in a sample of prime time television programs	Age distribution of characters	The greatest percentage of women were between the ages of 24 and 30; the greatest percentage of men were between 42 and 46. The author concluded the "percentage of women is highest in their twenties, and drops sharply when they no longer fit the conventional romantic roles. Males are more durable in the world of television drama, which has little use for the young and old of either sex."
L. J. Busby. Sex-role research on the mass media. *Journal of Communication*, 1975, 25(4), 107–131.	Commercial network programs directed toward children (sample size not available)	40 semantic differential items	24 of 40 items distinguished males from females at the $p<.025$ level of significance. When compared to the females, the males were: more ambitious, less affectionate, less sensitive, more competitive, more adventuresome, more of a realist, more knowledgeable, more violent, more independent, more active, braver, stronger, more aggressive, less emotional, more sturdy, more dominant, more logical, more self-reliant, bolder, more individualistic, more outgoing, more of a leader, more patient, more bossy. When compared to the males, the females were: less ambitious, more affectionate, more sensitive, less competitive, less adventuresome, more of a romantic, less knowledgeable, less violent, less independent, less active, less brave, weaker, more submissive, more emotional, more fragile, less dominant, less logical, more dependent on others, more timid, less individualistic, more of a homebody, more of a follower, less patient, less bossy.
C. Cathey-Calvert, Sexism on Sesame Street: Outdated concepts in a 'Progressive' Program. Pittsburgh: Know, Inc.	Sesame Street program #189 (chosen at random for analysis)	Number of appearances of male and female characters; role and status of characters.	The study is a narrative description of one Sesame Street program highlighting the ways in which sex roles were portrayed: number of character appearances on program; 78 male and 35 female (including muppets, cartoons, adults, children and disguised people). Number of character appearances with dialog: 56 male; 8 female. Number of narrations: 4 male; 1 female. Length of dialog: time in minutes and seconds: male: 32 min., 35 sec. female: 4 min., 45.5 sec.
C. Fernandez-Collado & Bradley S. Greenberg with Felipe Korzenny & C. K. Atkin, Sexual intimacy and drug use in TV series. *Journal of Communication*, 1978, *28*(3), 30–37.	One episode each of 1976–1977 prime time and Sat. a.m. dramatic series. 77 programs; 58 hours. Variety shows, movies, public affairs were excluded.	"Explicit, insinuated or endorsed" acts of sexual activity subcategorized into (1) rape; (2) homosexual acts, (3) intercourse between marriage partners; (4) intercourse between unmarried people; (5) prostitution; (6) other intimate sexual behaviors.	Two most frequent categories were intercourse between unmarried partners which was implied a total of 41 times and behaviors related to prostitution which appeared 28 times (together accounting for 69% of all acts).

Table 1 continues on next page.

affection, love and intimacy; marriage and family life; and erotic conduct.

While each area is addressed separately, each aspect of sexual learning is interwoven with the others, both in the fabric of everyday life and on television. Given this interaction, the areas need to be viewed as dimensions of the same topic.

It is also important to keep in mind that the research findings reviewed for this section were based on television programs appearing over a 10-year timespan. Certainly,

Table 1

Selected Content Analyses (cont.)

Research Study	Sample	Major Variables	Major Findings
Patricia C. Donnagher, Rita Wicks Poulos, Robert M. Liebert & Emily S. Davidson, Race, sex and social example: An analysis of character portrayals on interracial television entertainment. *Psychological Reports*, 1976, *38*, 3–14.	Nine regularly broadcast programs having biracial representation with at least one male and one female portrayal were selected; a total of 60 characters analyzed from a pool of 139 network prime time television episodes representing 62 series; May 29, 1974–July 9, 1974.	Eight categories of interpersonal and self-control behaviors: aggression; altruism; control of aggressive impulses; delay of gratification/task persistence; explaining feelings of self or others; reparation of bad behavior; resistance to temptation; sympathy.	Males were portrayed as significantly more aggressive than females; white characters tended to be portrayed as more aggressive than blacks. For black characters, males tended to display more helping, sharing, and cooperation than females, whereas for whites, females tended to be portrayed as displaying more of these altruistic behaviors than males. Males exhibited gratification/task persistence more frequently than females. Blacks engaged in "explaining feelings of self or others" more than whites; and females more than males. For whites, female characters engaged in the behavior "reparation for bad behavior" more frequently than males; whereas for blacks the reverse was true. Females more than males were portrayed as resisting temptation to act in a way generally prohibited by society.
S. Franzblau, J. N. Sprafkin, E. A. Rubinstein, Sex on TV: A Content Analysis. *Journal of Communication*, 1977, 27(2), 164–170.	61 regular programs aired between 8:00 p.m. and 11:00 p.m. by three major networks during the week beginning October 11, 1975 (movies and specials were not included).	13 categories of physical intimacy: kissing; embracing; heterosexual intercourse, homosexual behavior; rape and other sex crimes; touching-aggressive; touching-nonaggressive; flirting and seductivensss; innuendo (with canned laughter); innuendo (no canned laughter); atypical sex roles; partner seeking. Comparison of program types (situation comedies, variety shows, dramas, and crime adventure). Comparison of family viewing time vs. post-family viewing time.	The physically intimate behaviors which appeared most often were kissing (3.74/hour), embracing (2.68/hour), aggressive touching (5.48/hour), and nonaggressive touching (68.11/hour); all other behavior appeared quite infrequently. Intercourse, rape and homosexuality behavior had virtually no behavioral appearance on the prime time programs analyzed; only verbal references to rape and other sex crimes occurred. (With the exception of aggressive touching) all behaviors were predominately casual in intensity. Programs aired from 8–9 p.m. showed significantly more nonaggressive touching (84.9/hour) than did those aired either between 9–10 p.m. (55.63/hour) or 10–11 p.m. (58.06/hour) . For innuendos there was a tendency for more to appear between either 9–10 p.m. (.4/hour) or 10–11 p.m. (.36/hour). Overt kissing appeared significantly more often on situation comedies than on crime-adventure shows. Embracing also appeared significantly more often on variety shows than in situation comedies, crime adventure shows or dramas.

there have been changes in television programs, and the medium continues to change each season. Nevertheless, many programing changes are superficial, and the underlying reality of roles and values portrayed often remain stable over time. Also, television is the great recycler; old movies and reruns of dramatic programs and situation comedies abound, adding to the sameness of values portrayed over time.

Gender Roles

The single most important aspect of a child's sexual learning is the set of messages children—indeed all of us—receive throughout life about "appropriate" masculine and feminine attributes and roles. Our cultural expectations have been and still remain gender-specific; and it is difficult to escape gender-specific influences on

Table 1

Selected Content Analyses (cont.)

Research Study	Sample	Major Variables	Major Findings
G. Gerbner. A preliminary summary of the special analysis of television content undertaken for the Project on Human Sexual Development. (Unpublished paper), Annenberg School of Communications, University of Pennsylvania, March 1976.	Data obtained from Cultural Indicators television data archives that contain the annual monitoring and coding of prime time and weekend daytime network dramatic programing samples; 1,991 separate close personal relationships analyzed.	Nature of "close" relations between men and men; women and women; and women and men.	One out of three male leads intends to or has been married; two out of every three females are or get married. 47% of all close relationships on television are between men; 43% of relationships are between men and women; 10% of relationships are between women. Only one out of five family or romantic type relationships involve partners working together. Nearly one-third of close relationships involve conflict or violence; conflict between the sexes is almost as frequent as conflict between males. Those who are romantically linked have the most (48%) conflict and violence.
G. Gerbner & N. Signorielli, Women and minorities in television drama. Annenberg School of Communications, University of Pennsylvania, 1979.	1365 television programs and 16,888 character parts from 1969–1978. (One week of prime time and weekend daytime in the fall 1969–1978, as well as spring samples in 1975 and 1976.)	Division of roles by sex and ethnic background.	Men outnumber women three to one. Black and Hispanics are underrepresented. "Dominant social groups tend to be overrepresented and over-endowed" while minorities have "less than their proportionate share of values and resources." Women have 27% of all parts and 29% of major roles. Men get 73% of all parts and 71% of lead roles. Distorted picture of the population's age spread: Only 27% of real population but more than half of prime-time population is between 25 and 45. Although people over 65 make up 11% of real population, this segment of society is only represented at 2.2% of the characters in prime time.
B. S. Greenberg, M. Richards, L. Henderson, & C. K. Atkin. Trends in sex role portrayals on television. (Unpublished study) January 1980.	Three seasons: 1975–76, 1976–77, 1977–78; each season contained from 60–70 television hours encompassing 80–90 different episodes of fictional television series. Each season researchers dealt with the behaviors of more than 1000 speaking television characters (nonspeaking characters were omitted from all analyses).	Male/female interactions; order giving and support needs.	Men gave more orders on the average than did females in each of the three seasons. Most regular context of order giving is from a male authority figure. Males receive more orders from other males than females; females get their orders equivalently from men and women. Male-originated orders were followed more frequently and proportionately more often than were orders originating with females in each of the 3 years. In the situation comedy there is a parity between the sexes in the rates with which they engage in order-giving behaviors. Crime-adventure shows constitute a program type in which there is virtually no equity between the sexes. Males give more orders overall, more authority orders and more peer orders. Males needed physical support significantly more so than did females. Women needed ego support, psychological support, and support in connection with their concern for others significantly more than did the male television characters. Women are more likely to request support than are men. Men are significantly more likely not to request support in situations in which they might do so. Support was given disproportionately to the females in all three seasons, and given to females at a higher rate than males in two of the three seasons.

Table 1 continues on next page.

our identity as sexual beings. One important element in gender role learning is the way in which boys and girls are segregated—physically and psychologically. Physically, they are directed to play in different ways with different toys and later are encouraged to participate in different school curricula (shop or home economics) and to consider different work roles. More important, however, boys and girls—men and women—are segregated psychologically by having it reinforced that how one gender behaves, the other should not. Even the term "op-

Table 1

Selected Content Analyses (cont.)

Research Study	Sample	Major Variables	Major Findings
L. Henderson, & B. S. Greenberg, Sex typing of common behaviors on television, Report No. 11. Unpublished study, Department of Communication, Michigan State University. August 1979.	158 network programs aired during two sampled weeks in the falls of 1975–76 and 1976–77; 115 prime time evening programs and 43 Saturday morning; 117.5 hours of television. The sample weeks consisted of one episode each of all regularly scheduled fictional series. (Variety shows, movies, specials and public affairs programs were not included.) 2322 characters with speaking roles observed.	Two objectives: study to determine how broad a set of common everyday behaviors television portrays; to what extent the performance of those behaviors is sex typed. Twenty-one general categories were developed to encompass a broad perspective of the activities of a normal person's day (e.g., housework, food preparation, games, yardwork, and personal grooming.)	Of the total of 2,322 characters with speaking roles, 28% were female; 72% were male. Females were shown doing disproportionately more: entertaining of others, preparing and serving food, performing indoor housework. Females were displayed doing disproportionately less: driving, participating in sports, using firearms, conducting business on the phone, drinking and smoking.

posite sex" implies this segregation. Thus, if girls can cry, boys cannot; if men are competitive, women are not.

For the most part, television programs perpetuate this notion of men and women as opposites. Taken together, the studies suggest that on television, men are stereotypically ambitious, competitve, smart, dominant, and violent (Busby 1974; 1975). They think logically, are seldom beset by strong emotions (unless it is anger) and solve their own problems, usually without the help of others. On the other hand, women on television tend to be sensitive, romantic, warm, submissive, timid. They are also more fair, sociable, happy, and peaceful. In a sense, they are portrayed as "nicer people," being more likely to help, share, and cooperate with others, to sympathize and explain their feelings to others, to repair damaged caused to others, and to resist the temptation to break societal rules (Donnagher et al. 1976). Females, however, are less likely than males to accomplish tasks. They are often impulsive, overemotional, unable to solve problems—their own or anyone else's—and usually depend upon their father, husband, colleague, or boyfriend to come up with the solutions (United Methodist Women's Television Monitoring Project 1976). Furthermore, on television, similarity between men and women seems to breed conflict. A man and woman who share similar personality traits or perform similar tasks are more likely to have a relationship characterized by conflict and violence than are men and women with different personalities and roles (Phelps 1976*b*). For example, if a woman on television is nurturant and a man independent, their relationship is more likely to be peaceful than if both are independent.

This segregation of the sexes on television is not a matter of "separate but equal." In a variety of ways, males dominate the prime time television screen. One might logically expect television's world to reflect the real world's sex distribution, approximately 50 percent male, 50 percent female. However, on television, males have occupied between 66 percent and 75 percent of all television roles for the past 25 years (Gerbner 1972; Head 1954; Tedesco 1974). In action-adventure program's the percentages are even more inflated, with 85 percent of the principal characters male. Networks apparently have assumed that audience size will be maximized by showing mostly males. However, studies of both children and adults suggest that female viewers prefer to watch female characters (Sprafkin and Liebert 1978). Increased awareness of these audience preferences may have led to the slight increase evident in the number of female characters

Table 1

Selected Content Analyses (cont.)

Research Study	Sample	Major Variables	Major Findings
J. Lemon, Women and Blacks on Prime Time Television: An Analysis of Dominance Patterns. *Journal of Communication,* Autumn 1977.	All crime dramas and situation comedies broadcast during prime time, as listed from a March 1975, *TV Guide* (March 18–31, 1975).	2 major indexes: (1) An intersex (or interrace) index characterized portrayals of two party interactions between men and women (or blacks and whites) as those dominated by men, dominated by women, or equalitarian (also dominated black, white or equalitarian). (2) total number of appearances, both in intrasex and intrarace as well as intersex and interrace interactions. The total appearance index contrasts the number of times someone of a particular race or sex is portrayed as dominant, dominated, or as equal with the total number of times someone of that race or sex has been an interaction participant.	Men are more frequent participants in interactions and are dominant much more often than women. Situation comedies offered more favorable portrayals of both women and blacks than did crime dramas. The sitcom, which deals with family situations, interpersonal programs, and casual plot lines seem to lend themselves to egalitarian interactions and offer more favorable portrayals of women and blacks than the crime dramas which are dominated by white males and usually restrict women to roles peripheral to an action-oriented plot line. Occupational status was not relevant to the majority of interactions, and was relevant much more often for men than for women. Once relevant, men were usually of high social status and women were usually of low social status.

Table 1 continues on next page.

portrayed in action-adventure and dramatic programs in the past few seasons.

In several new programs, women do difficult and daring jobs and embody many of the demographic characteristics of the "modern American women." The "new" television heroine may be single (usually divorced), employed outside the home (often in glamorous or dangerous jobs), and may evidence some sophistication about the world. These female characters, however, are still the minority of women on television, and many television critics have pointed out that such shows simply serve to illustrate how the traditional roles are "dished up in new guises" (Himmelweit and Bell 1980). In these programs, the leading female character loses her cool more rapidly than male colleagues, depends on men for advice and directions, gets more emotionally involved, and evokes more concern for her safety. In subtle ways, television has managed to exploit women and yet contain the feminist movement; too often, such programs merely repeat the sexual stereotype prevalent in most other television programing.

While the majority of studies have concentrated on the portrayal of women on television, role stereotyping is present in the portrayal of male characters as well. Always in control, coolly planning, emotionally uninvolved, the man is rarely seen exhibiting other human traits such as vulnerability, nurturance, or emotional expressiveness. However callous his character, the television male has the traits necessary to help him succeed—in the board room or the bedroom.

Table 1

Selected Content Analyses (cont.)

Research Study	Sample	Major Variables	Major Findings
M. L. Long and R. J. Simon. The Roles and Statuses of Women on Children and Family TV Programs. *Journalism Quarterly*, Spring 1974, pp. 107–110.	22 television programs aired on Saturday morning and late weekday afternoons, March and April 1972 (shows that had no adult female characters and musical variety programs were excluded).	a) amount of time women appeared on screen; b) the statuses women maintained and roles they performed; c) the nature of male/female interactions; d) physical characteristics of the characters and their concern with appearance.	34 females appeared in 22 programs. None of the married women worked at jobs outside the home and of the single women who did only two occupied positions of prestige and authority. 12 of the 14 married women are shown in positions of deference to their husbands. 30 of the 34 women are thin, tall, attractive and nicely dressed. Women are referred to as girls, while men are men unless they are in fact boys. All of the unmarried women spend much of their time trying to attract a man. Women were usually portrayed as silly, overemotional and dependent on husbands and boyfriends. Men often occupied roles of prestige and leadership. They are portrayed facing the challenges and triumphs of the outside world. They are shown as capable, strong and intelligent. On comedy programs they tend to be shown as stupid and bungling.
L. Z. McArthur and S. V. Eisen. Television and Sex-Role Stereotyping. Brandeis University, Waltham, MA. Unpublished, copyrighted.	22 programs aired on the three major networks between 8:00 am–12:00 noon on 3 Saturday mornings in July, 1974; 110 central characters	Activity (problem solving, teaching, cognizance, artistic, other activity; Social Behavior including concordant (affiliation, compliance, succorance, cooperation, politeness, sharing); Autonomous (initiative, making decisions); Aggressive (physically, verbally); Emotions (happiness, sadness, anger, liking, bravery, fear); Physical State (appearance, body, brains); Role (familiar, friendship, hero, homemaker, occupational, supernatural, villain); and Consequences (material, psychological)	32% female; 78% male. Females were more often than males presented in terms of their relation to other people, in a "friendship role" and in a housewife role; males on the other hand were more often cast in an occupational role. Males more often than females displayed problem solving, outdoor activity, discordant social behavior, autonomy, sadness and a negative bodily state. Males were significantly more likely than females to receive consequences of any kind (except approval from other). Aggressive and autonomous social behavior were more common for males than females, concordant social behaviors were more common among females. Physical state of a positive appearance tended to be more common for females than males.

Television communicates countless messages to young people about what it means to be a man or woman in society. For the child, the pervasiveness of stereotyped images and the physical and psychological segregation of the sexes on television may imply that not only are these stereotyped and one-dimensional gender roles the prevailing ones but that there are no alternatives.

Body Image

Learning to view our bodies as a source of pride, pleasure, and satisfaction or a source of embarrassment, shame, or guilt also contributes importantly to our feelings about ourselves as sexual women or men. On television (and in most of society), body learning is closely

Table 1

Selected Content Analyses (cont.)

Research Study	Sample	Major Variables	Major Findings
J. C. McNeill. Feminism, Femininity, and the Television Series: A Content Analysis, *Journal of Broadcasting,* 19(3), 1975, pp. 259–271.	43 prime time fictional format series programs (one network/week for three weeks during March, 1973) (28 first runs; 15 reruns); data were obtained for 279 characters having major, submajor or supporting roles in the episode viewed.	34 items included data relative to character's sex role, marital and parental status, employment, major problems, and primary relationships; focus of character action; presence of explicitly feminist characters or issues; identification of household tasks performed, and orders, permissions and titles of respect used in job situations.	Males outnumbered females by more than two to one overall; by almost three to one in dramas; fewer females than males appeared in every drama category, and in every comedy category except "title" and "supporting/single episode." Marital and parental status of females are more often apparent. Among males, 46% had an indeterminate marital status and 53% an indeterminate parental status; for females, the figures were 11% and 19% respectively. Among major characters ⅔ of females and only ½ of males were or had been married. 72% of males and 44% of females were gainfully employed. Among married characters, the percentage for males rose to 78%, while for females it fell to 21%. TV men's occupations tended to concentrate in fields which carry high prestige; females worked under significantly closer supervision and had far less authority. 56% of employed females and 33% of employed males were supervised—90% of them solely by males. In no instance did a female exercise direct legitimate authority over an adult male. The 91 problems faced by women, had a more personal focus (family, marital, romantic conflicts constituted 35% of women's problems and only 18% of men's) than the 212 faced by men. A significantly higher percentage of females (64%) than of males (32%) focused on home/family/personal relationships, while a significantly higher percentage of males (39%) than of females (15%) focused on profession/job.
National Organization for Women, National Capital Area Chapter. *Women in the Wasteland Fight Back: A Report on the Image of Women Portrayed in TV Programming,* 1972.	Summer 1972 composite week of programming monitored from 7:00 a.m. to 1:00 a.m.	Actual numbers of males and females; incidence of their appearances, race, age, occupations and nature of participation by males and females, also some information on issues discussed.	70% of all characters in dramatic programming and variety shows were male; approximately ¾ of all secondary characters were male. (Proportionately more females were secondary characters than major characters.) 40% of all males were over 40; but only 15% of women fell into this age category. Only 21% of characters with occupational roles were female; most females were depicted as dependent, helpless and emotionally unstable.

Table 1 continues on next page.

related to gender role learning. In general, the emphasis for males is on strength, performance, and skill development—"what can my body do?" The emphasis for females is on attractiveness and desirability—"how do I look?" Eighty-five percent of women on television are under 40 (National Organization for Women 1972). In addition to being young, most women on television are attractive, well-groomed, and fashionably dressed (Long and Simon 1974). While male roles seldom are limited by an actor's wrinkles, baldness, or other cosmetic signs of aging, few women have significant leads on television once they no longer fit the conventional youthful, romantic roles (Aronoff 1974). The average age of a television female is nearly 10 years younger than a male (Aronoff 1974). The elderly (over 65) on television have been identified as more than 90 percent male (Petersen 1973). Older women are practically invisible on television, and those that do exist are quite likely to fall or to be hurt or killed. The elderly man or woman on television is usually cast as a comic character, treated with disrespect, and portrayed as stubborn, eccentric, foolish, and "asexual" (Signorielli and Gerbner 1977).

In recent years, there has been particular concern about the portrayal of women's bodies on television. Female television characters are far more likely than males to use their bodies seductively (Silverman et al. 1979). Many critics point to storylines and settings that require revealing or erotically enticing female costumes, or to camera angles that dwell on specific aspects of a woman's body. Such treatment not only casts women as "sex ob-

Table 1

Selected Content Analyses (cont.)

Research Study	Sample	Major Variables	Major Findings
J. F. Seggar. Imagery of Women in Television Drama: 1974. *Journal of Broadcasting,* 19:3, 1975.	Using quota and random sampling techniques, approximately 50% of all TV dramas were observed between 3:30 p.m. and 11:00 p.m. daily, Monday through Saturday, for five consecutive weeks, February 4 through March 9, 1974. The universe of content for study was defined as those variety and dramatic entertainment programs which depicted people interacting in modern settings. Excluded from analysis were cartoons, commercials, news programs, quiz programs, historical westerns, sports events and talk shows.	*Portrayal* (appearance of a person on screen sufficiently long to sex type them and record their appearance); *role significance* (classification of TV portrayal as major, supporting, minor and bit part—nonspeaking); *ethnic status; marital status; photographic reference* (special attention given by the cameraman to parts of the female anatomy); *attractiveness* (beautiful, attractive, ordinary, ugly); *dress* (well dressed, ordinary or poor); *location* (e.g., living room, kitchen, etc.); *dominance/subordination; occupational status; attitudes towards work; competence; wealth.*	Analysis of female portrayals: 9% major roles; 11% supporting; 15% minor; 65% bit parts. 85% white, 9% black; 6% other minority groups. Majority of females (57%) categorized as beautiful/attractive and only 3% were ugly. More than a third (38%) of women were dressed better than the ordinary. Of the 199 roles in which females were interacting with males, 33% of females were found in the interaction pattern to be superordinate (telling, commanding, giving orders, directing, or counselling), 43% were shown equal to male counterparts and 24% were found to be subordinate. 36% of females were shown as performing some clearly observable occupational task. Five most frequently shown occupations: housewife, secretary/receptionist, police related, students, nurses. Females portrayed significantly less in 1) occupational roles generally, 2) in professional roles specifically. Females portrayed 3) as less competent than males in performance of tasks and 4) were more likely to be dominated by males during interaction. The females were also 5) more likely to be shown as married 6) more fashionably dressed and 7) better off financially than their male counterparts.

jects" but communicates that men are only interested in women for their erotic potential. While male characters are allowed wider latitude in terms of physical appearance, they, too, are frequently typecast, particularly on action-adventure programs. In these shows, the prize (fame, money, or a woman) usually goes to the strongest, swiftest, and toughest man. A predominant way of demonstrating such attitudes is through the use of male bodies in physical violence and combat. Police officers and detectives on television are latter-day gladiators, required to prove their physical prowess (and their importance) over and over again.

Affection, Love, and Intimacy

As social beings, we communicate and receive many messages about our needs for affection and affiliation. Through verbal and nonverbal communication, children learn how, when, and with whom it is appropriate to share intimate thoughts and feelings. Once again, this learning is different for males and females. Girls, more than boys, are encouraged to express affection through hugging, touching, nurturing, and caretaking behavior. Indeed, males are often discouraged from kissing, hugging, being gentle or nurturant, or asking for comfort and help. This learning takes place informally and incidentally, as boys and girls observed how affection and love are shared, who is allowed to cry, and who can ask for help.

The majority of "close relationships" on television are between partners who work together (Gerbner 1976). In these televised relationships, however, one is struck by the lack of genuine intimacy—particularly on dramatic or action-adventure programs. Although the heroes and

Table 1

Selected Content Analyses (cont.)

Research Study	Sample	Major Variables	Major Findings
L. T. Silverman, J. N. Sprafkin and E. A. Rubinstein. Physical Contact and Sexual Behavior on Prime-Time TV. *Journal of Communication,* Winter 1979, pp. 33–43.	64 programs sampled as representative of prime time 1977–78 regularly scheduled programs, movies and specials aired between 8:00 and 11:00 p.m. by the three major networks during one randomly selected week beginning Wednesday, October 19, 1977 in New York City area (excluding a two hour sports telecast and commercials).	23 categories of behavior ranging from casual interpersonal touching (e.g., ritualistic, accidental, supportive) to more intimate contacts and references (e.g., affectionate touching, kissing, sexual innuendo) to "social discouraged" sexual practices (e.g., homosexuality, prostitution, transsexualism) were coded and further categorized by physical, verbal and implied modes of presentation. Characters coded for: sex, race, age, marital status, occupation, and centrality to the plot.	There were no overt physical portrayals of intercourse witnessed during the sample week; however, contextual implications that sexual intercourse had happened or was about to happen occurred a total of 15 times (slight increase over 1975 sample). Variety shows, situation comedies, and movies/specials all contained significantly more "ritualistic touching" than did dramas. Physical suggestiveness occurred significantly more in variety shows than in all other program types. Variety shows also contained the largest number of explicit verbal references to heterosexual intercourse. Verbal suggestiveness (innuendo) was presented significantly more often on situation comedies than on crime/adventure programs. Tendency for "contextually implied" sexual intercourse to occur most often in movies/specials. 8:00 p.m. programs contained significantly more ritualistic and accidental touching per hour than those aired at 9:00 p.m. and 10:00 p.m. Sexual behaviors which are socially unacceptable due to the choice of an inappropriate partner occurred five times as frequently between 9:00 and 11:00 p.m. (nearly one every programming hour) as between 8:00 and 9:00 p.m. (one in every 5 programming hours). Distribution of characters: 56% white males, 27% white females, 6% black males, 5% black females, 5% nonblack minority males; 1% nonblack minority females. Flirtatious behaviors (physical suggestiveness) quadrupled in frequency from 1975; sexual innuendos increased more than five fold from the earlier analysis; sexual intercourse was never contextually implied in the 1975 program sample, and in 1977 such cues appeared fifteen times during the study week (of course, intercourse was never shown on TV) Females in programs were more likely than the males to act seductively; while the males were more likely than the females to be aggressive.

Table 1 continues on next page.

heroines are portrayed as leading exciting and rewarding professional lives, they appear to endure austere private lives, lacking in physical or verbal expressions of tenderness (Franzblau et al. 1977).

Because television programs tend to portray men and women as opposites and because women are most frequently cast as affectionate, romantic, and vulnerable, it is difficult for males to demonstrate these aspects of their humanity, especially in television drama. Men are less likely than women to kiss, hug, or affectionately touch another television character—man, woman, or child. For a male to ask for help, cry in frustration , or unabashedly hug a friend, spouse, or even a child, he must be cast in a comedy role. One study (Franzblau et al. 1977) revealed that displays of affection, such as kissing, hugging or embracing, appear more often in situation comedies than crime-adventure or dramatic shows.

The image of intimate and affectionate relationships portrayed on television is indeed limited. Women, primarily concerned with attracting men, are often cast in competition with other women, making close, affectionate and warm relationships between them unlikely. Men, cast as all-knowing, competitive, and aggressive, seldom share their need for affection or their intimate feelings with anyone. Affectionate interchanges, generally limited to situation comedies, are deemed irrelevant and inappropriate to the "real world"—the man's world of action and drama (Franzblau 1979). And even indirect verbal statements about intimacy are rarely heard on these programs.

Table 1

Selected Content Analyses (cont.)

Research Study	Sample	Major Variables	Major Findings
S. H. Sternglanz and L. A. Serbin. Sex Role Stereotyping in Children's Television Programs. *Developmental Psychology.* 1975, 10(5), pp. 710–715.	10 popular (according to Nielsen ratings) commercially produced children's television programs from the 1971–1972 television season. (A program was included in the analysis if it regularly contained at least one male and one female character.)	Character's behavior, importance in the plot, and "goodness or badness." Categories of behavior: activity, achievement-construction, dominance, aggression, deferrence, autonomy, harm avoidance, succorance, nurturance, magic, recognition, self-recognition. In addition, whenever a character performed a behavior, the consequence of that behavior was scored as either positive, negative or neutral.	33% female; 67% male 67 good males and 25 bad males vs. 43 good females and 2 bad females. Males were significantly more likely to be shown as aggressive, constructive and succorant. Females were significantly more likely to be shown as deferent and as being punished for displaying a high level of activity. More females (16%) than male characters (4%) used magic.

Marriage and Family

The pattern and meaning of our close relationships and our expressions of intimacy are often communicated through the ways in which we learn to arrange, integrate, and manage our lives. Family patterns and lifestyles—decisions to get married, to remain single, to live alone or with friends, to balance work and family responsibilities—are related to personal and/or social views of acceptable sexual roles and relationships. For many Americans today, this aspect of sexuality, especially the balance of work and family responsibilities, is being seriously examined. With increasing numbers of women entering the paid labor force, men, women, and children alike are struggling to find new ways to structure family roles and responsibilities.

Television programing seldom portrays the joys and difficulties inherent in these lifestyle changes. In fact, most television does not reflect these changes at all. On television, marriage and family life are of concern primarily to females (McNeill 1975). While divorce is a more common occurrence on television than it was a decade ago, most women on television still are married; if single, widowed, or divorced, they are usually preoccupied with "getting a man." Few television characters have children; over 90 percent of television characters have no children (Phelps 1976*a*). If a woman is a mother, she is even less likely to have a life outside her family. While family life is portrayed as a woman's domain, she seldom enjoys authority within her home. Preoccupied with cooking, cleaning, and childcare, she relegates most authority and responsibility to male characters. Any exception to this rule, i.e., the successful working woman character, usually must pay a price for the "deviation" by having problems in her personal relationships with lover, husband, or child. For most female characters, financial stability is generally achieved by marriage or family background, rather than by work. On those few occasions where a woman's wealth was achieved by work, it was usually gained at the expense of happiness (Himmelweit and Bell 1980).

Such a picture is in striking contrast to the male lifestyles portrayed. For men, the important world is outside the home. Male characters rarely have much of a personal life, and family must take a second place to the more rewarding demands of a job. Television programs frequently do not even tell us the marital status of male characters. One study found the viewer could not tell if 46 percent of men were married, compared to 11 percent of the women; and could not identify if 53 percent of the

Table 1

Selected Content Analyses (cont.)

Research Study	Sample	Major Variables	Major Findings
United States Commission on Civil Rights. *Window Dressing on the Set: Women and Minorities in Television.* August 1977.	Data used in this analysis obtained from the Cultural Indicators Research Project conducted by the Annenberg School of Communications, University of Pennsylvania. Sample consisted of network dramatic programs broadcast between 8:00 p.m. and 11:00 p.m. and children's dramatic (non-cartoon) programs broadcast on Saturdays. One week of programming during the fall season was videotaped and coded for each year of the sample. (1969–1974). Characters must have played a speaking role in order to be included in analysis. Total number cf major and minor characters in the six year sample was 5,624.	Sex, race, age, economic, occupational, and parental status; as well as their perceived goodness.	White males constituted 65.3%; white females constituted 23.8%; nonwhite males, 8.6%; and nonwhite females, 2.3%. White males were older than all other characters; 34.3% were coded as 41–60 years of age. (Only 19.8% of the white females and 13.7% of both the nonwhite males and the nonwhite females were 41–60.) Females predominated in the 21–30 year old group. Almost half of the nonwhite females and more than one-third of the white females were categorized in this age group. The television male is not family bound. Two-thirds of the white male and three-quarters of the nonwhite male major characters were not depicted as husbands. In contrast, 50.2% of all white female and 45% of all nonwhite female major characters were portrayed as wives. Only 6.8% of all characters had children. Data on parental status of characters first collected in 1972. Generally television presents a middleclass world in which characters are more likely to be rich than poor. In fact, poverty is virtually ignored. Presentation of women as wives and mothers is reinforced in the data on occupational portrayals. Over half of the white (57%) and nonwhite (53.4%) female characters could not be identified in an occupational role, whereas 69% of the white males and 60% of the nonwhite males could be so identified. Those females who could be identified were most frequently portrayed in business, health and education; three fields in which women have traditionally held secretarial, nursing and teaching positions.

men were parents, compared to 19 percent of the women. Also, less than 20 percent of male interactions have been found to focus on marital or family relationships (McNeill 1975). However, among those television characters whose marital status we do know, men appear more successful than women, even at their marriages; men on television are less likely than women on television to be divorced (Silverman et al. 1978). As noted earlier, the vast majority of males on television are portrayed as strong, adventuresome, and independent. An exception to this stereotype is the television husband-father (often portrayed in the situation comedy format); unlike his male peers in the action-adventure shows, he is frequently characterized as inept and bungling.

One message for the child viewer, then, is that for women, marriage is an all-consuming lifestyle. Women who deviate from this lifestyle risk their happiness and jeopardize the well-being of their loved ones. For men, marriage and family may be seen as largely irrelevant or a lifestyle to which the less able and the ineffectual are relegated.

Erotic Conduct

An effort to expand the notion of sexuality on television should not downplay or eliminate the topic which is most often thought of when discussing "sex on television"—that is, erotic conduct. How and when young children learn to identify certain modes of conduct as "sexy" or erotic is still a process not clearly understood, but what each of us learns to define as arousing or erotic certainly influences the way in which we interpret the multitude of signals in our society related to sexual behavior.

There are few, if any, visual portrayals of explicit erotic activity on commercial television programing. There are, however, numerous cues for the viewer about the events that presumably will happen or have happened off screen. In the past several years, there has been a marked increase in the frequency of such "cues," and today's television audience is increasingly "teased" by flirtatious behavior, subtle and indirect verbal references to sex (innuendo), and implied intercourse.

When erotic activity is implied on television, it frequently is linked with violence. For example, most verbal references to sex in action-adventure or dramatic programs result from the discussion of rape or other sex crimes (Franzblau et al. 1977). Most references to intercourse on television, whether verbally insinuated or contextually implied, occur between unmarried partners (five times as often as between married couples); references to intercourse with prostitutes come in second. Together, these account for almost 70 percent of all allusion to intercourse on primetime television programs. When not prostitutes or victims of sex crimes, women characters use their eroticism to entrap men. For prostitute or police woman, sex is a major vehicle for women in achieving their goals (Himmelweit and Bell 1980). Erotic relationships are seldon seen (or discussed) between people in the context of warm, loving, stable relationships.

Contraceptive responsibility seems to be a "nonissue" on most television programs, and pregnancy or venereal disease is often used as the punishment for sexual activity by the "wrong people"—people who are too young, too old, too poor, too ugly, etc.

Television's attitudes toward the erotic dimension of sexuality are seldom direct or clear. Its messages are cloaked increasingly in subtle innuendo and provocative flirtation. Sex is treated as a prelude to, or context for, violence or is viewed as an aspect of life to be treated with nervous laughter. On situation comedies and variety shows, characters touch, kiss, embrace, and through seductive innuendo and flirtation suggest sexual intimacy; these suggestive messages are usually accompanied by canned laughter and laugh cards to make certain the humor is not missed.

Television prescribes and manipulates how the audience interprets even the most subtle of television's sexual remarks. In fact, it probably helps them to think of those remarks as suggestive or "sexy" in the first place. Television tells the child viewer over and over that human sexuality equals sexiness and that sexiness is an acceptable subject if it is cloaked in humor or ridicule or viewed as harsh, hurtful, or criminal part of life (Franzblau et al. 1979).

Implications

Our concern with television's sexual curricula is of more than speculative interest. At the simplest level, one implication of the research is clear: Television is a sex educator of our children and a potentially powerful one. Contemporary television entertainment is saturated with sexual lessons, lessons which are likely to have an impact on young viewers' sexual development and behavior.

But what are the further implications? Some critics have damned the medium and called for the removal of "sex on television." But television's sexual messages are not separable from the rest of programing. Television does and must deal with issues of sexuality. These issues are central to understanding humanity, and they are at the core of human comedy and drama.

Other organized attempts seek ways to "improve" television's content. Such efforts have had little overall impact on the sexual content of television programing.

Given the highly centralized nature of television programing, even desired changes in television's sexual content are unlikely to be suited to the needs and desires of all American children and their families at all times. This is not to deny the responsibility of the broadcast medium to our youth but to suggest that, in addition to seeking ways to make the broadcast medium more aware of and responsive to the public interest, alternative ways must be sought if we are to improve the conditions of a child's sexual learning from television.

Over the years, there have been studies examining the ways in which, and extent to which, parents interact with their children's television viewing. These studies conclude that parents can effectively intervene by controlling the amount of time children watch television, by influencing content choices, and by mediating learning and performance of behaviors learned from television. Drawing attention to important content, making evaluative comments, and defining the terms or elaborating on concepts can all affect what the child learns from television. Unfortunately, despite these opportunities, most parents do not control their children's viewing patterns (Greenberg et al. 1972). Recently, however, there have been attempts in the form of model programs to encourage parents to take a more thoughtful and active role in their children's television viewing. Given the evidence that parental involvement can mediate television's effects, such programs ought to be expanded and supported.

Finally, since television is likely to be most influential when alternative sources of information are absent, the most significant way of countering television's influence on sexual learning is to provide other opportunities for understanding sexuality. Teachers, pediatricians, scout leaders, ministers, and, most importantly, parents should all be encouraged to bring issues related to human sexuality out from "under the rug" and to open avenues of discussion with their children.

All the evidence suggests that television fills a void when parents and other significant people in a child's life permit it, and until we change our societal ambiguity about alternative avenues for sexual learning, television's predominance as the sex educator of our children will continue to grow.

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Television's Influence on Social Reality

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> We have noted and deplored the paucity of research about the manner in which values with respect to many areas of behavior, including violence, are transmitted, and about the role played by television and other mass media in this communication. In the long run, societal values are shaped by a great variety of environmental forces and institutions; television programs may contribute a great deal or only a small amount to the process. (Surgeon General's Scientific Advisory Committee on Television and Social Behavior 1971, p. 115).

The committee's call stimulated a great response in research since 1971. The committee also forecast the future by suggesting the inadequacy of a direct-effects model of television's influence on society. In this review,[1] we will consider one area of effects research—how television's content is used in the construction of social reality. As the committee implied, however, and as becomes clear later, television's influence on constructions of social reality is probably a complex and indirect process in interaction with "a great variety of environmental forces and institutions."

Does Television Affect Social Reality?

The Problem of Demonstrating Television Influence on Social Reality

Demonstrating the influence of television on individuals' conceptions of the world—their social reality—faces all the usual problems of television effects research (lack of unexposed groups, causal ordering, and control of third variables), with two added complications. First, if the relevant messages of television are patterns present only in the aggregate, experimental tests of television's influence will be far less generalizable than usual, unless they are grandiose field experiments. Second, and even more important, if the patterns in television content reflect norms of society (as seems likely), television's influence will be that of stabilizing and reinforcing the status quo—something difficult to document with statistics designed to measure differences, not the absence of differences.

One of the main conclusions of Klapper's review of mass communication effects (1960) was that the mass media act largely in concert with other influences and as reinforcers of already held beliefs, but he based this conclusion largely on the scarcity and small size of *change* effects rather than on direct evidence of reinforcement. And many a conclusion about mass communication states, roughly, "the most important effect of mass communication is no effect at all," accepting that statement as either a truism or an untestable hypothesis.

A major contribution of the Cultural Indicators group at the Annenberg School of Communications has been to take that hypothesis and attempt to devise ways to test it. One way takes advantage of the distinction between television reflecting the objective world or reflecting a set of values and norms about that world. Although the television world seems realistic, it contains systematic distortions and biases, such as more violence than in real life, underrepresentation of women, minorities, the young and the old, and exaggerated relationships between various forms of success and sex, age, and occupation. Standard survey techniques can determine whether or not there is any association between the amount of exposure to these distorted images and the belief that the real world matches the distorted television images.

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[1] The editors of *Communication Research, Human Communication Research, Journal of Communication, Journalism Quarterly,* and *Public Opinion Quarterly* helped us contact authors of relevant but as-yet unpublished papers; many of these papers are a substantial departure from previous work, and their inclusion makes this paper very different and much better than it would otherwise have been. Steven H. Chaffee provided comments and suggestions.

For example, the U.S. Statistical Abstract for 1974 provided the information that 10 percent of all crimes are violent crimes, whereas content analyses show that 77 percent of all major television characters who commit crimes also commit violence. A survey respondent can be asked "What percent of all crimes are violent crimes like murders, rape, robbery, and aggravated assault?" with a forced choice between two wrong answers, 15 percent and 25 percent. One of the wrong answers is closer to the "real world" of the Statistical Abstract, and the other is closer to the "TV world" statistic; an association with television viewing is demonstrated if heavy viewers are more likely than light viewers to give the "television answer."

Making the inference that television is the cause of this television-bias effect, of course, requires the usual pursuit of potentially spurious third variables, but the television versus real-world bias comparison allows for an additional argument about causal order. Because the television bias answers are so different from the real world, direct experience seems unlikely to be the source of these beliefs for the heavy television viewers. Thus, a reversed causal direction (having these television bias conceptions of the world leads one to prefer television because it matches one's beliefs) is less plausible.

From these results, it is a relatively small step to argue that television provides reinforcement for all those cases where the real and normative worlds concur. Even so, there is another important step in the cultivation of social reality. Demonstrating that people apply the demographic characteristics of the television world to their beliefs about the demographic characteristics of the real world would indicate television's influence, but these demographic beliefs themselves are probably not as important as the further, more generalized beliefs. The influence argument takes a final step as follows: if viewing a biased picture of the world on television has led someone to believe that the real world matches those biases, the overestimates of violence, law enforcement occupations, and so on generalize to beliefs, such as personal fear of violence, acceptance of authority, etc. This is intriguing, but it is a separate hypothesis that is as yet untested.

Recent reports have concentrated on the more interesting, general aspects of social reality. For example, respondents have been asked to agree or disagree with such statements as "Is it dangerous to walk alone in a city at night" and "Would you say that most of the time people try to be helpful or that they are mostly just looking out for themselves?" Once again, an association with viewing is a prerequisite for inferring television influence, but controlling for third variables and establishing causal order become even more important since these variables seem more open to other influences.

One final methodological point deserves mention. Gerbner and his colleagues make a great deal of the argument that television's influence is one of social control, stability, maintenance of the social order, etc. It is important not to confuse these reinforcement predictions with a null hypothesis; a positive correlation between television viewing and social reality beliefs does not necessarily reflect change by heavy television viewers. It may be that heavy television viewing prevents the drift away from the norms that would otherwise happen and is responsible for a less television-like social reality for light television viewers.

What the Research Says

In table 1, we summarized most of the research. This review will focus on these studies for the most part. This summary covers 24 different samples,[2] 48 separate published and unpublished papers; and 12 independent researchers and research groups.[3]

The 24 samples range in size from 57 to 4,254, and cover many geographical areas. Several are national samples (NORC, CPS, Harris, ORC, Starch); these tend to be adult samples. Other adult samples include one from the southwest, one from California, one from Cincinnati, one from Madison, Wisc., and two from Philadelphia. The adult samples outside the United States include two from Great Britain and one from Canada. Samples of children are from New Jersey, New York, Philadelphia, and Australia.

Television viewing measures also exhibit a range from average number of evenings per week that television is viewed at least 1 hour (Cincinnati) to viewing diaries (Madison, Wisc.; Philadelphia mother-child dyads; Toronto, Canada; and Perth, Western Australia). Some measures ask about frequency of exposure to various program types (Arizona; CPS National Election Study), the rest ask about number of hours viewed on an "average day," or "usually," or "yesterday," or "on a school

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[2] The samples that Gerbner et al. (1977–79*a*,*b*) report for New Jersey and New York schoolchildren are treated here as two separate samples. The New Jersey longitudinal panel (1974–77) is not, however, since all of the children in this panel were in both of the New Jersey samples.

[3] Most of the 45 papers were written by Gerbner and Gross and associates. We have chosen to describe colleagues and graduate students working with Gerbner and Gross as part of their group and not as independent researchers; this is obviously arguable. Besides researchers named in joint authorship with Gerbner or Gross, these researchers include Gonzales, Harr-Mazer, Morgan, and Rothschild.

Table 1

Television Viewing and Constructions of Reality: Brief Overview of Research

Sample	Authors	Television Measure	Controls	Relationship	
Arizona Southwestern City Registered Voters *N*=133 to 215	Volgy and Schwarz, 1980	Exposure to medical programs, entertainment programs, and ethnic programs	None reported	Positive affect toward doctors (medical shows)	+
				Sexism (entertainment shows)	+
				Concern about racial problems (ethnic shows)	+
California Three Counties Adults *N*=762	Haney and Manzolati, 1980	Number of hours per day	Sex, income, age, occupation, education; zero-order correlations with TV viewing and dependent variables	Attitudes about criminal justice 11/21	+
Cincinnati Area Project 1975: Adults *N*=470 to 475	Fox and Philliber, 1978	Average number of evenings/week watch TV at least 1 hour	Income, occupation, education, and all together; perceptions of veracity; sex, age, and race	Perceptions of affluence	0
CPS National Election Study 1976: Adults *N*=2,335	Gerbner, et al., 1978a; 1978b	Frequency of viewing police-crime shows	Age, sex, education	Fear of walking alone at night	+
				Protection:	
				Dog	+
				Locks	+
				Gun	+
				Avoid areas	0
				Interpersonal mistrust	+
	Neville, 1980	Frequency of viewing police/crime, national news, local news, daytime entertainment	Age, sex, race, income, education, all together	Interpersonal mistrust with—	
				Police/crime	+
				Daytime	+
				News	0
Harris Poll for National Council of Aging 1974: Adults *N*=4,254	Gonzalez, 1979	Number of hours "yesterday"	Education, income, sex, age, race	Negative beliefs about older people	+
	Gerbner, et al., 1980a	Number of hours "yesterday"	Education, income, sex, age	Negative beliefs about older people	+

day," etc., (California Adults; NORC General Social Surveys; New Jersey and New York schoolchildren; ORC; Philadelphia schoolchildren; and Starch).

Most of the studies use controls at one point or another, and these controls are typically demographics such as age, sex, and education. The use of controls in cultivation analyses is a significant issue in evaluating the research, as discussed further in the next section.

Until recently, most of this research centered on aspects of social reality related to the violent content of television, including fearfulness (usually of walking alone at night), interpersonal mistrust, and perceived prevalence of violence. Several researchers studied other areas of social reality in the last few years, so that we now have research on the link between television viewing and attitudes about doctors (Volgy and Schwarz 1980), sex-

Table 1

Television Viewing and Constructions of Reality: Brief Overview of Research (Cont.)

Sample	Authors	Television Measure	Controls	Relationship	
Madison, WI Women: Adults 1979 *N*=57	Pingree, et al., 1979	Minutes viewing soap operas, evening, from 2-day viewing diary	Age, education, income, occupation, all together	Interpersonal mistrust (soaps) Prevalence of violence Traditional family values (soaps) Family structures (prime time)	+ 0 + +
NORC General Social Survey 1975: Adults *N*=1,452	Gerbner, et al., 1977a, 1977b	Number of hours on the average day	Sex, age, education, income, newspaper reading, church attendance, race	Interpersonal mistrust U.S. out of world affairs*	+ +
N=1,333	Hughes, 1980	Number of hours on the average day	Sex, age, race, education, income, hours worked/week, numbers of memberships, population size, all together	U.S. out of world affairs	+
NORC General Social Survey 1977: Adults *N*=1,516	Gerbner et al., 1978a; 1978b	Numbers of hours on the average day	Age, sex, education	Fear walk alone at night Anomie: Lot of average man worse Child into world Public officials not interested	+ + + +
N=1,312 to 1,377	Hughes, 1980	Number of hours on the average day	Sex, race, education, income, age, hours worked/week, number of memberships, church attendance, population size, all together	Fear walk alone at night Anomie: Lot average man worse Child into world Public officials not interested Approval of violence: Adult hitting Police hitting Own guns Pistol	0 ∩ 0 ∩ 0 – 0 0
NORC General Social Surveys 1975, 1977, 1978 *N*=1,838	Gerbner & Signorielli, 1979	Number of hours on average day	Age, sex, race, education, newspaper reading, income	Sexism	+

Table 1 continues on next page.

ism (Volgy and Schwarz 1980; Gerbner and Signorielli 1979; Rothschild 1979; Morgan 1980); family values and structures (Pingree et al. 1981; Morgan and Harr-Mazer 1980; Harr-Mazer 1980); concern about racial problems (Volgy and Schwarz 1980), beliefs about older people (Gonzalez 1979; Gerbner and Signorielli 1979; Gerbner et al. 1980*a*), perception of population illness (Robertson et al. 1979), attitudes about criminal justice (Haney and Manzolati 1980), and perceptions of affluence (Fox and Philliber 1978).

As a first attempt to answer the question that this section addresses, and treating entries in table 1 as data points, there are two answers. If the unit of analysis is samples the answer is "yes," television use does appear to have a significant influence on constructions of social reality. Of the 24 samples, 17 show significant positive relationships, 5 show no relationship, and 2 are disputed. On the other hand, if we look at the 12 independent researchers or research groups for their interpretations of their own work, 7 of the 12 believe the relationship

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Table 1

Television Viewing and Constructions of Reality: Brief Overview of Research (Cont.)

Sample	Authors	Television Measure	Controls	Relationship	
	Hirsch, 1980	Number of hours "on an average day"	Education, sex, age, race; all together	Alienation* and	+
				anomie†	∩
				Fear walk alone at night†	∪
				Approve violence†	∩
				Interpersonal mistrust†	+
				Approve suicide†	−
$N = 382$	Hirsch, 1980	Number of hours "on an average day" compares nonviewers vs. light, heavy vs. extremely heavy	Age, sex, education	18 items used to form the six scales used above	
				Nonviewers vs. light viewers:	
				13 items	−
				5 items	+
				Heavy vs. extreme viewers:	
				11 items	−
				1 item	0
				6 items	+
New Jersey School children 1975–76: 6th, 7th, 8th, 9th grades $N = 466$	Gerbner et al., 1977a; 1977b	Number of hours per day, including morning, afternoon, and evening usually spend watching	Sex, age, newspaper reading, father's education, IQ, all together	Prevalence of violence	+
	Gerbner et al., 1978a; 1978b	Number of hours per day, including morning, afternoon and evening usually spend watching	Age, sex, parent's education	All right to hit	+
				Fear walk alone at night	+
	Gerbner et al., 1980a	Number of hours per day, including morning, afternoon, and evening, usually spend watching	IQ, social class, sex, grade	Old age starts early	+

between television viewing and social reality to be spurious, and the answer is "no."

Of course, this isn't fair. The latter analysis gives single pieces of research as much weight as entire programs, and the former says nothing about the complexity of findings or quality of the various research findings. It is to this task that we now turn.

There are two crucial issues in evaluating the area. First, is the relationship between television viewing and constructions of television-biased social reality an artifact of uncontrolled or improperly controlled third variables—in other words, is it spurious? Second, if the relationship persists despite controls, what is its causal order?

Spuriousness. Evidence in support of a relationship can be found in many studies and for many areas of social reality. There is the most evidence for areas of social reality related to violence.

Demographic Measures. For measures closely tied to the demographics of television content, the research consistently shows small and significant correlations. For example, Gerbner et al. (1977*a,b*) asked New Jersey schoolchildren questions such as those listed in table 2. These questions were conbined into an index, and when the index was correlated with television viewing, the zero-order correlation was .16 ($p < .001$). Partialing on sex, grade, newspaper reading, father's education, socioeconomic status, and IQ changed the correlation very

Table 1

Television Viewing and Constructions of Reality: Brief Overview of Research (Cont.)

Sample	Authors	Television Measure	Controls	Relationship	
New Jersey Schoolchildren 1976–77: 7th and 8th grades *N*=214 to 339	Gerbner et al., 1979a; 1979b	Number of hours per day, including morning, afternoon, and evening, usually spend watching	Sex, grade, ethnic group, newspaper reading, network newsviewing, father's education	Prevalence of violence	+
				Fear walk along at night	+
				Interpersonal mistrust	+
New Jersey Schoolchildren 1974–77 Panel 6th-8th/7th-9th/8th-10th grades *N*=216	Morgan & Harr-Mazer, 1980	Number of hours "on an average day"	SES, IQ, sex, grade, family structure, mother's education, religious background	Family:	
				Early for marriage & childbirth	+
				Projected family size	+
	Morgan, 1980	Number of hours "on an average day"	IQ, grade, mother works, father's occupation, education	Sexism: girls only	+
	Gross & Morgan, 1980 (last 2 years only)	Number of hours "on an average day"	SES, family context	Interpersonal:	
				Mistrust (depends on family context)	+
				Prevalence of violence	+
	Gerbner et al., 1980b; 1980c (last 2 years only)	Number of hours "on an average day"	SES, IQ, and 2nd year scores	Interpersonal mistrust	+
				Perceived danger	+
New York Schoolchildren (Bankstreet) 1976: age 9–11, 12–14 *N*=133	Gerbner et al., 1977a; 1977b	Number of hours per day, including morning, afternoon, and evening usually spend watching	Sex, age, newspapers, SES, all together	Prevalence of violence	+
			Sex, age, SES, newspaper	Interpersonal mistrust	+
	Gerbner et al., 1978a; 1978b	Number of hours per day, including morning, afternoon, and evening usually spend watching	Age, sex, father's education	All right to hit	+
				Fear walk alone at night	+
New York Schoolchildren (Private School) 1977: grades 5–8, 9–12 *N*=123	Gerbner et al., 1979a; 1979b	Number of hours per day including morning, afternoon, and evening usually spend watching	Sex, grade, SES, achievement, experience as victim	Prevalence of violence	+
				Fear walk alone at night	+
				Activities of police	+
ORC 1974 Adults	Gerbner et al., 1977a; 1977b	Number of hours "yesterday"	Sex, age, education, newspaper reading, all together	Prevalence of violence	+

Table 1 continues on next page.

Table 1

Television Viewing and Constructions of Reality: Brief Overview of Research (Cont.)

Sample	Authors	Television Measure	Controls	Relationship	
ORC national sample, 1979, Adults $N=5{,}534$	Gerbner et al., 1980b; 1980c	Number of hours on the average weekday	Sex, age, income, newspaper reading, education, race, urban proximity; all together	Perceived danger	+
Philadelphia: Adults $N=593$	Harr-Mazer, 1980	Amount of viewing on an average day	Age, education, sex, religion, income, race, newspaper reading, children under 18	Child's role in society restricted	+
Philadelphia 1977: Mother-Child Dyads 3rd, 5th, 7th grades $N=675$	Robertson, Rossiter & Gleason 1979	Exposure to medical ads: past week and month viewing of randomly selected list of TV shows (not during school or after 11:30 p.m.)	Grade	Perception of population illness	0
Philadelphia Schoolchildren 3rd and 5th grades	Rothschild, 1979	On a school night, (weekend) how many hours of TV	Sex, group cohesiveness, group affiliation, grade, SES, achievement level, all together	Depends on group cohesiveness:	
				Interpersonal mistrust	0
				Sexism	+
				Occupational aspirations	+
Starch 1973 Adults $N=573$	Gerbner et al., 1977a; 1977b	Hours/day	Sex, age, education, newspaper reading, TV news, all together	Prevalence of violence	+
			Outside USA		
British Gallup Poll 1976: Adults 16 and over $N=258$	Wober, 1978	Hours/day	Sex, age, social class	Interpersonal mistrust	0
				Prevalence of violence	0
Portsmouth (UK) survey 1976: Adults $N=842$	Piepe, Crouch, & Emerson, 1977	?	?	Interpersonal mistrust	0
				Prevalence of violence	0

little, and, although it was reduced to $r=.12$ with simultaneous partialing on all the above variables, it remained significiant. This pattern was replicated by Gerbner et al. (1977*a, b*) in their New York sample of schoolchildren ($r=.18$), and with adult samples from the 1974 ORC ($r=.08$) and the 1973 Starch surveys ($r=.06$), although the partial correlation is smaller after all controls for the two adult samples than it is for the two child samples.

Gerbner et al., (1979*a,b*) also dealt with New York and New Jersey schoolchildren and with questions on prevalence of violence. They report results for both samples for television biases in estimates of the number of people involved in violence and for the New Jersey schoolchildren for the number of people who commit serious crimes. Results show an overall significant "cultivation differential" (percent of heavy viewers giving a

Table 1

Television Viewing and Constructions of Reality: Brief Overview of Research (Cont.)

Sample	Authors	Television Measure	Controls	Relationship	
Toronto Adults 1977 $N = 364$ to 405	Doob & Macdonald, 1979	TV programs last week coded overall & violent vs. nonviolent	Sex, age, geographical area, high-low crime, radio news, newspaper, all together	Fear of crime factor: only in high crime areas Prevalence of violence	0, + +
Perth (Western Australia) 1977 2nd, 5th, 8th, 11th graders $N = 1{,}085$	Hawkins & Pingree, 1980; 1981 Pingree & Hawkins, 1981	4-day viewing diary, frequency of exposure to content types, number of hours yesterday	Content types, age, sex, perceived reality, media studies, newspaper reading, SES, all together	Interpersonal mistrust Prevalence of violence	+ +

+ Significant positive relationship. 0 No relationship. − Reversal. ∩ Curvilinear.

* Controls for sex, education, age only.

† Excludes nonviewers and extreme viewers; our selection, see text.

television bias answer minus the percent of light viewers giving a television bias answer). The cultivation differential varies somewhat in their tables within levels of control variables. This variation does not indicate spuriousness; spuriousness would be indicated if the cultivation differential disappeared at all levels of a control variable. However, unlike the 1977 reports of correlational analyses, the effect of simultaneous controls is not given in the 1979 reports. It could be that each demographic variable accounts for a separate part of the cultivation differential, and, if all were controlled together, the differential would disappear. Still, we suspect that this would not be the case here, based on the close tie between television content and the questions used and on the previous results reported in Gerbner et al. (1977*a,b*). In support of this, Gross and Morgan's analysis of the last 2 years of the New Jersey Panel shows significant correlations for seventh and eighth graders between viewing and perceived prevalence of violence that hold across levels of family structure with father's education and occupation simultaneously controlled.

The last American study using the demographic prevalence of violence approach is an analysis of the different relationships between television content types and social reality (Pingree et al. 1979). There was no significant relationship between perceived prevalence of violence and either soap opera viewing or prime time viewing, although the prime time viewing correlation was stronger and in the right direction ($r = .21$). The small sample size of this study ($N = 57$) makes it difficult to treat its results as anything but suggestive.

Outside America, Pingree and Hawkins (1981) report confirming results for the prevalence of violence variables ($r = .20$), despite controls individually and together for age, sex, perceptions of reality, media studies, newspaper reading, current events knowledge, SES, and Australian-American similarity. This may be overcontrolled, since some of these variables (e.g., perceived reality) are process variables and not necessarily causally prior to television use.

In a study of fear of victimization with Canadian adults, Doob and Macdonald (1979) report results for a 25-item set of questions related to the nature and frequency of crime and violence. For 14 of the 25 questions, they report significant relationships to television viewing that do not substantially drop when the area in which the subject resides is controlled, suggesting that real-world differences in the actual level of crime do not mediate this relationship. Although this would appear to support the cultivation position for prevalence of violence, it is not clear whether it does or not, since Doob and Macdonald did not control for other characteristics.

A possible disconfirmation of cultivation of prevalence of violence comes from Great Britain (Wober 1978). Wober analyzed the results of a national opinion poll that asked two cultivation-related questions, one dealing with prevalence of violence phrased in terms of one's chances of being a victim of violence and the other with interpersonal mistrust. The two items were summed to form a "security scale," which was not related to viewing. Wober argues that this summing is a more powerful procedure than single-item scales. However, Wober's security scale is a mixture of the demographic approach and the interpersonal mistrust approach. As noted above, these two approaches are hypothesized to measure the

Table 2

Data Sources for Questions Included in Index Reflecting Television Answers Relating to Violence and Law Enforcement (Gerbner et al., 1977b)*

Question ("TV Answer" in Italics)	Data Source "Real World"	 "World of Television"
During any given week, what are your chances of being involved in some kind of violence? *About one in ten?* About 1 in 100?	.32 violent crimes per 100 people (1970 U.S. Census)	64.4% of characters are involved in violence (Table 1)
What percent of all males who have jobs work in law enforcement and crime detection? One percent? *Five percent?*	1% (1970 U.S. Census)	15% of all TV male characters (Cultural Indicators data, 1969–76)
What percent of all crimes are violent crimes like murders, rape, robbery and aggravated assault? Fifteen percent? *Twenty-five percent?*	10% (Statistical Abstract of the U.S., 1974)	77% of all TV major characters who commit crimes (as criminals) also commit violence (Cultural Indicators data, 1969–76)
Does most fatal violence occur between *strangers* or between relatives or acquaintances?	16% of homicides occur between strangers, 64% occur between family members or friends (National Commission on the Causes and Prevention of Violence, 1969)	58% of homicides committed by strangers (Cultural Indicators data, 1967–76)

* Used with permission of the authors.

same construction of social reality, but it is not logically necessary that they do.

But there is a more serious problem with this study related to differences in television content and viewing in Great Britain and the United States. Wober cites a study showing that heavy television viewers (4 or more hours per day) expose themselves to 10.7 violence-containing programs per week. In contrast, an American heavy television viewer (also 4 or more hours per day) would watch almost 24 hour-long programs containing violence per week. Thus, an American heavy viewer sees more than twice as much violence as a British heavy viewer. In fact, the British heavy viewer sees *less* violence than many American *light* viewers. Wober's comparison is between light and extremely light viewers of violence, and his negative results are not surprising.

This issue does force recognition of a hidden assumption: It is not just that exposure to violence leads in a linear fashion to construction of a violent social reality. There must be a certain *threshold* level of a social reality content for television influence to occur.

An example of the need for attention to content prevalence is a study of the effects of medical commercials on children by Robertson et al. (1979). They measured the exposure of third, fifth, and seventh graders to medical commercials, using a randomly selected list of 35 programs combined with actual incidence of commercials by program. They also measured perception-of-population illness with four questions estimating the incidence of symptoms in the population (e.g., how many times a month do people get headaches?). Results showed no relationship ($r = .00$) between children's perception of population illness and exposure to medical commercials, despite "the considerable depiction of illness on television, both on doctor shows and in medicine commercials." However, there were only two doctor shows on prime time in 1977 when the data were gathered (*M*A*S*H* and *Quincy, M.D.*), and these programs said little about headaches. Similarly, the children's exposure to medical commercials was light, amounting to less than 15 commercials per week. At most, this would seem to be very light exposure to the relevant content, and greater exposure than this is probably necessary.

This study also suggests the relative weakness of the demographic approach when it is tied neither to careful content analysis nor to real-world statistics. It is not possible to evaluate an answer for real-world or television-world bias when the statistical answer is unknown, and thus these questions lose their causal strength.

We are left with two studies that use the demographic approach, and neither of them is based on content analysis. Both use simultaneously applied controls, however, which help deal with third variable explanations and build the case for causal arguments. Pingree et al. (1979) used questions concerning the demography of the American nuclear family to test the hypothesis that prime time cultivates a rosy picture of the stability of the nuclear family (e.g., low divorce rate, two-parent families). Results showed that, despite controls for age, education, occupation, and income together, a significant relationship between prime time television viewing and "television-biased" stable family persisted ($r = .34$, $p < .01$). These results can only be viewed as suggestive, however, since the sample size is so small.

In a study slightly better supported by content analysis, Fox and Philliber (1978) dealt with perceptions of affluence, arguing that television overrepresents middle- and upper-class characters and thus an affluent lifestyle. If this is true, then heavy viewers should construct a social reality that overestimates the extent of affluence in American society. The affluence measure was an average of answers to seven questions, such as "how many Americans out of 100 have homes that cost more than $40,000?" Their measure of television use was "on the average, how many evenings a week do you watch TV at least one hour?" This weak measure of viewing seriously undermines what would be a strong analysis—using both simultaneous controls and interactions of viewing and other variables.

Their results show a small but significant relationship between television viewing and perceptions of affluence that is reduced by controls applied separately (income, occupation, and especially education) and is eliminated by all three together. Fox and Philliber's study, then, makes clear the need for controls, especially controls on characteristics that have an obvious relationship to the dependent variable (e.g., income, occupation, and education with perceptions of affluence). Further, their analyses show clearly that controlling separately is not sufficient: When controls that each reduce the relationship a little are applied together, they reduce it enough so that it is no longer significant.

Value-System Measures. The measures of social reality that are a step removed from the demography of television we label "value-system" measures. The intent is to measure some aspect of the meaning of the action of television, to tap the underlying value system of television content. As in the research on demographic variables, value-system research has dealt mostly with television violence: fearfulness of walking alone at night, acquisition of protective devices, alienation, greater acceptance of physical violence, and interpersonal mistrust or wariness.

Table 3 shows results from a New Jersey school sample for the question, "Is it dangerous to walk alone in a city at night?" Results show an overall cultivation differential that is significant, but the effect varies within levels of control variables. This does not indicate spuriousness; but controls are apparently not applied together. Similar results are found in the same sample with a slightly different phrasing of the question, in a New York schoolchildren sample for both "a city at night" and "your own neighborhood," and for both samples in a previous year (Gerbner et al. 1978*a,b*). Questions concerning fear of walking alone at night were also analyzed for two adult samples. Gerbner et al. (1978*a,b*) report, for the CPS 1976 data and for the NORC 1977 General Social Survey, significant cultivation differentials between light and heavy viewers that vary somewhat within controls (see table 1 for controls).

Other items asked about approval of hitting (e.g., "How often is it all right to hit someone if you are mad at them?") and about activities of the police (e.g., "When police arrive at a scene of violence, how much of the time do they have to use force and violence?") for schoolchildren, and about the use of protective measures (e.g., "bought a dog for purposes of protection") in the CPS National Election Survey. With individual controls, Gerbner et al. find significant cultivation differentials for all but one of the protection measures (1978*a,b;* 1979*a,b*).

Two recent reanalyses of the same NORC data provide a strikingly different picture by using multiple controls simultaneously and by including additional dependent variables (Hughes 1980*a*; Hirsch 1980). By introducing simultaneous controls for a number of potential third variables (see table 1 for controls), Hughes found that the relationship between viewing and fear of walking alone at night was reduced to nonsignificance. Hughes also examined several other variables that Gerbner et al. (1978*a,b*) report in their NORC (1975 data) analyses. The relationship between viewing and a question about America staying out of world affairs is weakened but remains significant. And for two anomia questions that Gerbner et al. found significant in the 1977 NORC data ("Most public officials are not really interested in the problems of the average man," and "In spite of what some people say, the lot of the average man is getting worse"), the relationships remain significant but appear *curvilinear*: Medium viewers show the most agreement.

Hughes also analyzed four questions from the NORC data sets that had not been reported by Gerbner et al. For two questions about approval of violence similar to those reported by Gerbner et al. (1978*a,b*), for schoolchildren ("Are there any situations that you can imagine in which you would approve of a man punching an adult male

Table 3

Percent of Adolescents Who Consider Walking Alone in the City at Night Dangerous
(Gerbner et al., 1979b)

	Giving Television Answer								
			Television Viewing[1]						
	Total		Light		Heavy		(% Heavy– % Light)	Total	
	%	N	%	N	%	N		gamma	N
Overall	83	(339)	79	(139)	86	(200)	+ 7	.24*	407
Controlling for *Sex:*									
Male	78	(140)	76	(62)	80	(78)	+ 4	.14	179
Female	87	(199)	83	(77)	90	(122)	+ 7	.32*	228
Grade in School:									
7th	91	(153)	75	(53)	85	(100)	+10	.31*	189
8th	85	(186)	83	(86)	88	(100)	+ 5	.20	218
Ethnic Group:[2]									
Ethnic	84	(84)	82	(37)	86	(47)	+ 4	.12	100
Non-Ethnic	83	(228)	79	(85)	86	(143)	+ 7	.25*	274
Newspaper Reading:									
Everyday	81	(126)	80	(62)	82	(64)	+ 2	.05	155
Sometimes	84	(211)	78	(75)	88	(136)	+10	.36*	250
Network News Watching:									
Almost Daily	87	(81)	83	(29)	90	(52)	+ 7	.28	93
Once in a While	83	(147)	81	(64)	85	(83)	+ 4	.13	177
Hardly Ever	83	(110)	76	(45)	88	(65)	+12	.38*	133
Father's Education:									
No College	83	(147)	77	(51)	96	(96)	+ 9	.28	178
Some College	83	(153)	79	(70)	87	(83)	+ 8	.30	184

[1] "Altogether, about how many hours a day do you usually spend watching TV, including morning, afternoon, and evening?" Light: less than 4 hours; Heavy: 4 hours and more.

[2] Those who perceive themselves as members of a special group of Americans, such as Italian-Americans, Chinese-Americans, Afro-Americans, etc.

* $p \leq .05$ (tau).

Data Source: New Jersey School.
Interview Date: December 1976; May 1977.
Method: Self-Administered Questionnaire.
Question (WLKRSK3B): "Is it dangerous to walk alone in a city at night?"
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stranger" and a similar question about police striking male citizens), the relationships were the *reverse* of what had been found with the schoolchildren (light viewers were the most likely to approve of violence), and one of the two relationships remained significant even under multiple controls.

Hirsch's reanalysis replicates that of Hughes using different statistical procedures and adding 10 items unreported by Gerbner to the reanalysis of eight that were reported by Gerbner et al. In addition, by combining samples from the 1975, 1977, and 1978 NORC surveys, Hirsch was able to isolate the two "tails" of the viewing distribution: Nonviewers were separated from "light" viewers (for Gerbner et al. 0–2 hours per day; for Hirsch 1–2 hours), and "extreme" viewers (more than 8 hours per day) were separated from "heavy" viewers (for Gerbner et al., 4 or more hours; for Hirsch, 4–7 hours).

Hirsch presents comparisons of nonviewers versus light viewers and heavy versus extreme viewers and finds reversal of the cultivation hypothesis for a substantial majority of the 18 items. That is, when compared to light viewers, nonviewers are fairly consistently more fearful, more approving of violence and suicide, and have higher levels of anomia and alienation. Extreme viewers, on the other hand, are less fearful, alienated, etc. than heavy viewers. Hirsch takes these results as contradicting the cultivation hypothesis.

When the 18 items are collapsed into six scales, the upper part of table 4 illustrates several of Hirsch's points. First, while even the joint predictive power of television viewing, education, sex, and race is very small for these six dependent variables, television's contribution is small and shrinks substantially when other variables are controlled ("unadjusted beta" and "adjusted beta" columns, respectively). Furthermore, the cultivation differential between nonviewers and extreme viewers is (1) usually very small compared to that of other predictors, (2) almost always the reverse of predictions, and (3) there is a linear relationship across the five categories of viewing for only one of the six dependent variables.

This would appear to be a dramatic disconfirmation of cultivation. However, the extremes of the distribution (the 4 percent nonviewers and the 4 percent extreme viewers) are unusual enough that they probably differ from other groups on possibly relevant third variables, so that ascribing their scores to a failure of the television influence hypothesis seems to us unreasonable. Therefore, on the bottom of table 4 we compared only the light, moderate, and heavy viewers and generally find larger cultivation differentials than before between light and heavy viewers, although these are still much smaller than those of the control variables such as education. Still, these differentials are negative (although smaller) as often as positive, and more importantly, three of the six appear to be best explained as curvilinear relationships.

Several factors could account for this difference in results between Hirsch and Hughes and Gerbner et al. First, the questions may be a source of some of the disagreement. Hughes' (1980*a*) NORC questions asked people to *imagine a situation*, while Gerbner et al. asked children *how often is it all right*. Hughes himself makes a similar argument about differences in questions concerning the protection measures. And the rationale for applying the cultivation hypothesis to the six alienation items and the four suicide items (Hirsch 1980) is so lacking that we tend to discount these results. Gerbner et al. (1980*d*), in responding to Hughes, report that the approval-of-violence items analyzed by both Hughes and Hirsch were discarded for inadequate reliability, although it is not at all clear just what the alphas they report are based on; we tend to accept this measure as useful, even though it results from a single item. Second, children and adults are not always comparable, and perhaps adults surveyed in the NORC General Social Surveys are not comparable to the adults in the CPS National Election study. Nevertheless, there is surely more to the difference than sample differences: Gerbner et al. (1978*a*,*b*), Hughes (1980*a*), and Hirsch (1980) differ in some of their results with the *same* sample and questions.

This leads to the issue of controls: Gerbner et al. apply controls one at a time; Hughes and Hirsch apply more controls and use them simultaneously. When controls are

Table 4

Summary Statistics on Television Viewing's "Separate and Independent Contribution" to the Variance Explained on:

Variable	Multiple R^2 for Television Viewing, Education, Sex, and Race	Unadjusted Eta for Television Viewing	Adjusted Beta of Television Viewing	High-Low Differential for Largest Contributor to R^2	High-Low Differential (None vs. Extreme) for Television Viewing
Alienation	0.08	0.11	0.06	−20.64 (Education)	−2.42 +
Anomia	0.13	0.16	0.08	−28.50 (Education)	−2.36 ∩
Fear	0.18	0.06	0.03	39.68 (Sex)	−6.13 ∪
Actual Violence	0.07	0.09	0.05	16.67 (Education)	−3.33 ∩
Mean World	0.12	0.13	0.06	−25.03 (Education) 22.19 (Race)	3.81 +
Suicide	0.07	0.10	0.06	10.91 (Education)	−6.91 −

NOTE: Above from Hirsch, P. The "scary world" of the nonviewer and other anomalies: A re-analysis of Gerbner et al.'s findings of cultivation analysis. *Communication Research*, 7:403–456, 1980, Sage Publications, Inc., with permission of the publisher and the author.

Variable	High-Low Differential (Light vs. Heavy) for Television Viewing	Nature of Relationship for Light, Medium, and Heavy Viewing
Alienation	4.44	+ Positive
Anomia	5.11	∩ Curvilinear
Fear	−1.08	∪ Curvilinear
Actual Violence	−4.02	∩ Curvilinear
Mean World	4.47	+ Positive
Suicide	−2.37	− Negative

applied simultaneously, the cultivation effect of Gerbner et al., which should have a linear or at least monotonic form, either flattens out or becomes curvilinear in all cases but one.

This would appear to be a disconfirmation of the cultivation hypothesis; it raises serious questions about the control procedures used in many studies. Apparently, individual control variables applied separately are not as effective as when applied in concert.[4] Each may be accounting for different pieces of the variance, and we would never be able to see this by controlling sequentially. Alternatively, Hughes' (1980) and Hirsch's (1980) procedures may also be inappropriate—for a different reason. Although controlling for third variables leaves a relationship of television and a social reality variable that is independent of those third variables, it may mislead us by removing relationships that are conditional on third variables. For example, even if a positive correlation between viewing and belief is reduced to zero because of education's relation to one or the other, subgroups on education (or even subgroups on another variable with no zero-order relation to viewing or beliefs) can still differ in the degree of association between viewing and beliefs.

Furthermore, the application of control variables should be theoretically motivated and interpreted, with special care given to consideration of the causal order of the control variable and the two variables of interest. Changing a zero-order correlation by removing a causally prior third variable suggests that the original relationship may have been partially spurious (without ruling out conditional), but changing the relationship by removing the covariance of an intervening third variable should suggest an interpretation of indirect influence through intervening processes. And, while curvilinear relationships between viewing and beliefs after the application of causally prior controls suggest that the relationship between viewing and beliefs cannot be explained by monotonic theories or be assumed to apply universally, these unexpected relationships demand further explanation—not the simple negation of the original simple hypothesis.

Recently, Gerbner et al. (1980*b*,*c*) presented some analyses that begin to respond to these critiques and suggestions by both simultaneously employing multiple controls and checking for subgroup differences. For the anomia items from the 1977 NORC survey reanalyzed by Hughes and Hirsch, partialing simultaneously on eight variables reduces the television-belief relationship to zero for two education subgroups, but not for the third: The correlation between viewing and anomia remains unchanged ($r = .14$) for those respondents with some college education. And there were similar subgroup results for the combination of income level and where one lives for an index labeled "perceptions of danger."

Subgroup differences can also be found in Doob and Macdonald's (1979) study of Toronto adults living in areas that varied in amount of real-world crime. Doob and Macdonald were testing the hypothesis that "people who watch a lot of television may have a greater fear of being victims of violent crime, because, in fact, they live in more violent neighborhoods." Using a recall-diary of television viewing for 1 week and a measure of fear-of-crime, Doob and Macdonald found an overall significant relationship between television use and fear of crime.

However, when city-suburb, level of crime, sex, and age are entered in a multiple regression before television viewing, this relationship disappears. What is suggestive of conditional effects is that Doob and Macdonald also report the television-fear correlation separately for the four city-suburb and level of crime areas and find a significant correlation ($r = .24$) only in the high-crime city area (the correlation in the high-crime suburb is similar at .16, while the correlations for the other two groups are much smaller). Unfortunately, however, these subgroup correlations are not partialed for sex and age, nor were interactions of television with area included in the multiple regression, so these differences can only be taken as suggestive.

Moving away from fear-alienation-protection, but still related to television violence, is a value-system area called "interpersonal mistrust" or "wariness." These variables usually have some variation on "Can most people be trusted, or are they just looking out for themselves?"

Gerbner et al. (1977*a*,*b*; 1979*a*,*b*) found significant differences for light and heavy viewers for school children with variations within control variables such as age, sex, ethnic group, newspaper reading, network news viewing, and father's education. Similarly, they found a television-viewing interpersonal mistrust relationship with adults in the CPS sample and in the 1975 NORC sample with controls such as sex, age, education (CPS sample) in addition to income, newspaper reading, church attendance, and race (NORC sample). Again, the controls are applied separately. However, Neville's (1980) reanalysis of CPS data in a path analysis with age, sex, race, income, and education showed a significant contribution of both prime time and daytime television to interpersonal mistrust. In Australia, Hawkins and Pingree (1980*a*) similarly found a significant correlation under simultaneous controls. Thus, the relationship has received support when examined with multiple control variables together.

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[4] We suspect that the efficacy of Hughes' control procedures is the result of controlling variables together rather than the additional control variables Hughes uses. In an analysis we suggested, Hughes dropped one of the strongest predictors of television watching (hours worked per week) and reanalyzed the data: Results were the same as when hours worked per week were included as a control procedure. (Hughes 1980*b*).

One other study deserves mention to emphasize the need to relate influence hypotheses explicitly to television content. In most cases, value-system measures are only implied by television content. But Haney and Manzolati (1980) found 21 attitudes about criminal justice as consistent themes in dramatic television programs (e.g., crime is a product of the criminal's personality and not of societal structures and law violations by police to apprehend criminals are acceptable). For 11 of these 21 items, heavy viewers were more likely than light viewers to agree. Adequate controls were not applied, but the study is noteworthy in demonstrating that hypotheses about television influence on value systems can be based more directly on content analyses and not simply on implications derived from content demographics.

Areas of social reality that have been studied in addition to violent television content deal mostly with value systems related to traditional sex roles, family structure, and images of older people.

In analyses of a 1974 Harris Poll, Gonzalez (1979), Gerbner et al. (1980*a*), and Gerbner and Signorielli (1979) report significant television viewing-value system relationships for negative beliefs about older people. These include beliefs that the proportion of older people is declining, that people do not live as long as they used to, and that older people are less healthy than they used to be. Gerbner et al. (1980*a*) report significant relationships for negative images: "Older people are not open-minded and adaptable, are not bright and alert, and are not good at getting things done." These relationships were controlled separately with variables such as age, education, income, sex, race, and contact with the elderly. Similarly, Gerbner et al. (1980*a*) found that, compared with light viewers, heavy viewers among schoolchildren thought that "people become old" at a younger age.

For traditional sex roles, Volgy and Schwarz (1980) report higher levels of sexism among adults heavily exposed to entertainment programs, but since neither measures nor controls are reported, this study is impossible to evaluate. Rothschild (1979) reports conditional results for some subgroups that withstand simultaneous controls, and Gerbner and Signorielli (1979) find a sexism cultivation differential between light and heavy viewers in their analysis of NORC's General Social Survey data from 1975, 1977, and 1978. Their controls, while not applied simultaneously, suggest a "leveling" effect for cultivation of sexism: Within levels of some control variables, television-sexism relationships work in opposite ways. Gerbner and Signorielli (1979) argue that this implies that television cultivates a certain *level* of sexist orientation, bringing some toward traditional roles from a nontraditional orientation and some the reverse.

Research on family structure value systems is scarcer. Harr-Mazer (1980) found significant relationships between viewing and measures of child victimization and seeing children's societal roles as more restricted. Since this work is still underway, details of measures and analyses are unclear, but relationships were found to be stronger for younger and college-educated respondents. Also, significant results for family structure value systems and viewing were found for some subgroups by Pingree et al. (1979) and Morgan and Harr-Mazer (1980).

Finally, Volgy and Schwarz (1980) also report significant relationships between viewing medical shows and affect toward doctors and between viewing ethnic shows and concern about racial problems. However, we are told nothing about their measures or analysis techniques.

Summary. Is there a relationship between television viewing and social reality? Most studies show evidence for a link, regardless of the kind of social reality studied. These studies cover a diverse range of areas including prevalence of violence, family structures, interpersonal mistrust, fear of victimization, traditional sex roles, family values, images of older people, attitudes about doctors, and concern about racial problems.

There does seem to be a relationship then, but is it real, or is it an artifact of some third variable? The research does not easily answer this question. It may lie partly in the kinds of social reality we are concerned with. Relationships between viewing and demographic measures of social reality closely linked to television content appear to hold despite controls.

This is only partially true for value-system measures. For measures concerned with interpersonal mistrust, the research shows a similar pattern to that with demographic measures. However, this is not the case for fear of victimization and for alienation. Simultaneously applied controls reduce the relationship below significance, produce curvilinear patterns, or reverse the relationship of beliefs and viewing. The few conditional results hint that these odd overall patterns may result from the combination of subgroups for which there is no relationship with subgroups for whom a positive relationship persists. Given the mixed evidence, our conclusions here must be tentative: The zero-order relationships reported between television viewing and these aspects of value systems *may* be spurious, or the relationship may hold up only under certain conditions.

The other value system areas also require more sophisticated analyses, but in any case there are so few studies in each area[5] that little can be said until the work has been replicated.

Causal Order. A relationship between two variables says nothing about the nature of that relationship. One could cause the other, or vice versa, or both could work reciprocally, or a third variable could cause both. Fortunately, we have several kinds of evidence to help explore the causal direction of the TV-social reality relationship—experiments, longitudinal analyses, and indirect evidence.

Experiments. First, it should be pointed out that use of the experimental method of study cultivation goes against a basic assumption of the cultivation approach, namely, that effects occur over time and through repeated exposure to bits and pieces of information and to value systems that favor a particular construction of the world (Gerbner and Gross 1976). However, experiments are the best evidence for causal direction, and, to the extent that any social reality effects can be demonstrated experimentally, the case for the cultivation hypothesis is strengthened. Tan (1979) studied the effects of exposure to television beauty ads on perceptions of the importance of beauty, sex appeal, and youth in various "real-life" roles. He showed high school girls 15 commercials that either emphasized beauty or did not mention or show beauty themes. Tan's results support the argument that television content causes change in social reality; exposure to beauty themes in commercials produced higher ratings of the importance of beauty for two of the five roles.

Bryant et al. (1981) also found evidence that television influences social reality beliefs in a study of anxiety, likelihood and fear of victimization, and likelihood of retribution for violence. Bryant et al. used controlled television diets for a 6-week period and randomly assigned undergraduates to light viewing, heavy viewing of violence ending with justice, and heavy viewing of violence ending with injustice. Their results showed that heavy viewers were more anxious and fearful, regardless of retributive justice, although there was suggestive evidence that cultivation of fear and anxiety is more pronounced when violence is unjustly rewarded. There was also evidence for a reciprocal relationship between viewing and violence: Heavy viewers of violence with retributive justice subsequently exposed themselves to more violent television. This does not imply, however, that anxiety per se causes viewing, since heavy viewers of injustice exposed themselves to *less* action drama subsequent to their diets. Thus, this experiment supports the hypothesis that the television viewing-social reality link is causal with television as the source and also refines the hypothesis to include a weaker reciprocal link.

Longitudinal Analysis. Morgan (1980) used the New Jersey schoolchildren panel for 3 years to make causal inferences about value-system measures concerning sexism. Using sexism scores in the third year as the dependent variable, Morgan conducted a hierarchical multiple regression. His results show that, for girls, amount of viewing in the first year significantly predicts sexism in the third year that is not attributable to earlier sexism or demographics. For boys, the relationship is reversed: Earlier sexism predicts third-year total television viewing.

And using the same sample, Gerbner et al. (1980*b*,*c*) report a path analysis of 2-years' television viewing, interpersonal mistrust, and perceptions of danger (a mixed demographic and value-systems index). Controlling for IQ, SES, and second-year values of the social reality variables, Gerbner et al. found that second-year television viewing still contributes to the adolescents' third-year social reality beliefs, indicating a causal contribution of television viewing. It is worth noting that second-year values of both social reality variables contribute to third-year viewing, so that the reciprocal causal link is supported as well.

Indirect Evidence. Gerbner and Signorielli's (1979) "leveling" argument also has causal implications, although as an argument it carries less force than an experiment or a longitudinal analysis. If television viewing is positively related to sexism for a group relatively low on sexism, but negatively related for a group relatively high on sexism, a counter-explanation based on an untested control variable requires an *interaction* of that control variable with either television viewing or sexism *and* the subgrouping variable. This is not impossible, but it does eliminate the simple ways for the control variable to produce a spurious relationship.

Some suggestive evidence against reverse causation can be found in Hawkins and Pingree (1981). We separated the influence of television into component parts corresponding to viewing specific content types. Quite different relationships to social reality beliefs were found with residuals of viewing content types partialed on total viewing—an estimate of watching more or less of that type than predicted based on sample norms and the individual's total viewing. These changed relationships refute the reverse causation argument that social reality beliefs lead people to television that matches those beliefs for confirmation. *Viewing* crime-adventure programs provided the strongest relationship for prevalence of vio-

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[5] Actually, there is a good deal of evidence to support a relationship between acceptance of traditional sex roles and television viewing, but the variables are not quite within the cultivation approach (see Greenberg, this volume).

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lence and interpersonal mistrust, but *choosing* to watch relatively more or less crime-adventure than one's total viewing would predict is unrelated to such beliefs. As in previous work by Chaffee (Chaffee 1972; Chaffee and Tims 1976), the link through preference or selection is unsupported, leaving the viewing effects explanation more plausible, at least for this study.

Two surveys by Wober (1979, 1980) provide an example of another indirect test that can be made. Wober compared ratings and "appreciation" scores for viewers in cities with high and low crime rates. Viewing action-adventure programs differed relatively little between cities, but appreciation scores varied considerably. In one survey, viewers in the more violent city seemed to like crime-adventure programs less, suggesting to Wober that "they have had enough of the real thing." In the other survey, however, the appreciation scores were reversed, suggesting that real-world violence leads to seeking vicarious violence on television.

Summary. The evidence concerning the causal direction of television's impact on social reality is not sufficient for strong conclusions. It is fairly consistent, however, and suggests that television *can* teach about social reality and that the relationship between viewing and social reality may be reciprocal: Television viewing causes a social reality to be constructed in a certain way, but this construction of social reality may also direct viewing behavior.

How Cultivation Effects Occur: Conditions and Processes

The cultivation of social reality has generally been treated sociologically, so that the psychological process(es) responsible for the sociological effects are generally summed up as "learning." For example, Gross and Morgan (in press) write, "A basic premise of Cultivation Analysis is that what happens to most people, most of the time, is more important than individual or discrete effects *for policy decisions*" (p. 11, emphasis added). And in describing variation in the cultivation differential across different levels of control variables (e.g., table 3), the Cultural Indicators group consistently acknowledges the differences but emphasizes the fact that the cultivation differentials almost always remain greater than zero (even though often too small for statistical significance).

But, it is equally plausible to look at figures such as those in table 3 and emphasize the differences in the positive cultivation differentials rather than the consistency of direction, asking "How does cultivation work, anyway?" What sorts of processing are involved in social reality construction based on television content? We will present theoretical arguments for and evidence bearing on five processes that may be involved: (1) information-processing abilities and cognitive-structural constraints, (2) critical awareness of and approach to television, (3) direct experience or other sources providing confirmation or disconfirmation of television's messages, (4) social-structural influences, and (5) cultivation identified with specific content and selective viewing instead of habitual viewing of television in general.

Processing Abilities

To the extent that individual construction is required for television to influence social reality, we need to expand on the notion of "learning" to more particular understandings of processes involved. And, if individual differences in processing abilities or cognitive structures are responsible for differences in cultivation, these abilities will provide an indication of some of the processes involved. The variety of conditional hypotheses involving processing abilities is potentially quite large, so we will mention only a few examples here and then discuss the few results available that bear on them.

Inferring patterns from discrete events might make IQ an important factor, with low IQ an inhibitor of cultivation effects. The evidence here is sparse. Gerbner et al. (1979*b*) do report separate cultivation differentials at high, medium, and low relative levels of achievement for their New York sample of schoolchildren. In estimating the proportion of people involved in violence, the cultivation differential is significant for low and medium achievement, but not for high achievement. However, this is not the appropriate statistic for concluding that there is less cultivation for the high achievement subgroup. What is needed is a test of the *differences* of the cultivation differential—something analogous to tests of the difference between two correlation coefficients. Such a test is not reported, but it appears that the cultivation differential of the high achievement group is not much less than that of the other two groups. Other dependent variables show a mix of patterns of achievement, but the subsample sizes are too small for meaningful comparisons.

Achievement, even as a surrogate for IQ, subsumes too much and thus is rather distant from processing abilities that would give us an idea of what goes on as television influences social reality. Ideally, one should determine individual performance on various processing abilities and then use these individual differences in conditional analyses for the same sample of individuals.

Comparisons across age groups would provide a surrogate method of comparison whenever one can trace developmental changes in processing abilities that parallel changes in cultivation. For example, one could predict stronger television influences on young children, based on cognitive-developmental theories suggesting that concrete-operational reasoning may be more inflexible and dogmatic than formal-operational reasoning. As an example, Cordua et al. (1979) showed children a videotaped visit to the office of Doctor Nancy and Nurse David and then asked the children to pick the doctor's and nurse's names out of a list of two male and two female names. Even tested immediately, first and fourth graders were overwhelmingly certain that the doctor had been a man and the nurse a woman. Seventh graders, in contrast, got the gender correct at immediate post-test, although they too slipped back in a 1-week retest. Such inflexible thinking could make concrete-operational children more affected by television message systems (cumulatively quite stereotyped), because they might accept and generalize the dominant messages, ignoring the few deviant ones. Adolescents and adults might partially balance the main message by noting the exceptions and admitting the possibility of others.

Also, greater influence for young children could be predicted on the basis of their tendency to acquire more incidental than central plot information. Because crucial message elements for social reality construction—things like the sex, age, and social class of victors and vanquished or the marital status of women (married) and men (single)—resemble information described in developmental literature as "incidental," those viewers with a "strong filter" focusing on central information and discarding incidental information may be less influenced by television viewing. In general, this focusing ability seems to be an age-related acquisition, with children older than 10–12 much more likely to ignore incidental information.

There are other intertwined processing abilities that suggest young children will not use television content to construct their social reality before adolescence. A variety of studies suggest that young children (before ages 8–10) have difficulty comprehending and making use of the order of isolated events in a plot (Leifer et al. 1971), lose track of order and relationships between events separated in a plot (Collins 1973), have difficulty making inferences about the causes and meanings of televised actions (Collins et al. 1978), and have difficulty understanding, let alone applying, dramatic characters' motives and the consequences of their actions (Leifer and Roberts 1972). Young children may simply not understand enough of what they watch to be cultivated by it.

Two samples from the Cultural Indicators group provide comparisons across transitional age ranges (New York schoolchildren and Bank Street children). Cultivation was reported in their youngest group (fourth to sixth grade) as strong as in the seventh to ninth graders at the same school (Gerbner et al. 1978*a*). There is even some suggestion in the New York schoolchildren sample of greater cultivation for fifth to eighth graders than for ninth to twelfth graders (Gerbner et al. 1979*b*). However, apparently stable correlations between viewing and interpersonal mistrust at fifth, eighth, and eleventh grade in the Perth sample changed after being partialed on SES: The relationship at fifth and eighth grade was reduced essentially to zero, while the correlation at eleventh grade was unaffected (Hawkins and Pingree 1980*a*).

Critical Attention to Television

A second set of hypotheses has to do with viewers' attitudes toward television and critical weighing of television messages. The perceived reality of television, for example, has been hypothesized to control involvement with viewing and the relevance of what is viewed, and these are believed to lead to greater effects of viewing (see Hawkins 1977 for a fuller review). Although this interaction prediction (between viewing and perceived reality) has been challenged by direct effect findings (Pingree 1978; Reeves 1978), the fact that the dependent variables have themselves to do with conceptions of reality in general make these hypotheses once again relevant. With social reality variables like prevalence of violence and interpersonal mistrust, perceived reality worked only in interaction with whether Perth students had taken a media studies course, only in reverse of expectations: Stronger cultivation correlations occurred at *lower* levels of perceived reality whenever perceived reality located significant differences cultivation (Hawkins and Pingree 1980*a*).

What may be important here is not the beliefs about television but what they may indicate about the "activity" with which people watch television. It may be that "inactive" viewing is necessary for social reality effects or that "active" viewing inhibits the influence. In one study (Pingree et al. 1981), social reality effects were compared for soap opera fans (who had paid to attend a soap opera convention and luncheon with several stars) and a random sample of women from the same city. The evidence suggested that the fans watched much more actively and discussed the programs with friends. Amount of soap opera viewing and soap opera-biased social reality were related for the random sample of women but not for the fans, suggesting that active processing and involvement may inhibit cultivation.

We are skeptical of interpreting this in a counterargument framework (Roberts and Maccoby 1973), because that would imply that the media consumer sees a particular point of view in a television message and argues against it during or immediately after message

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receptions. We suggest instead the term "critical consumer" processes, by which we mean evaluation of information during reception, greater retention of the bits and pieces of information provided by television, awareness of exceptions to patterns, more active search (not simply exposure) for confirming or disconfirming information, a more rational weighing of evidence in constructing social reality, and so on.

Besides the characteristics of active involved television viewing that prevent social reality effects, it is equally appropriate to suggest that uninvolved or passive reception can *enhance* some kinds of effects. Advertising researchers propose that, instead of a progression from attentive learning to evaluation and attitude formation and finally behavior, our understanding of much of television viewing, especially viewing commercials, will be increased if we consider an uninvolved, disinterested viewer assimilating only the simplest facts, names, and jingles, and then only into short-term memory. Examples include the purchase of low-cost interchangeable consumer goods (or voting for minor local candidates) based on short-term memory cues, with little intervention of preformed attitudes (Ray 1973).

The potential contribution of the low-involvement model may stem from the nature of the relevant television messages, as interpreted by Gerbner and his colleagues, even though these messages are quite different from the short-term learning from commercials. Advertisements constructed to take advantage of the low-involvement model make the brand name, jingle, and other simple characteristics as salient as possible, repeating the ad as often as is economically feasible. Putting across the crucial message elements for social reality construction is probably not the primary goal of producers of entertainment television. But for the viewer, because these elements are seldom crucial to plots of individual dramas, attention to them may be very similar.

If so, unfocused attention to plot-incidental items bears a strong resemblance to that of young children who do not focus on central information. The difference may be that, while young children *cannot* focus on central information, perhaps many adults (or most adults some of the time) can but *do not* focus, and thus they are more open to television influence on their social reality when they do not focus.

Experience

Even if television influences the construction of social reality, it does not do so in a vacuum. Viewers have their own experience, other mass media, friends, family, and their beliefs as filters for television's images. These factors may form conditions for television influence in at least three ways.

First, for any given television message, some minimum degree of *confirmation* from real-world experience, other sources, or even preexisting beliefs about social reality may be necessary to validate the television message; below that minimum threshold, the relationship between viewing and beliefs may be attenuated or absent (Gerbner et al. 1980*b,c* propose the same processes under the label "resonance"). Second, messages different from those of television coming from a heavily used or relied-on source could provide sufficient *disconfirmation* that the amount of exposure to television becomes less relevant or even irrelevant. Third, Gerbner et al. (1980*b,c*) suggest that, for some social reality beliefs, television's portrayals both form and match the *mainstream* of beliefs. Many population subgroups share these beliefs for other reasons, and the amount of television viewed adds little; but for divergent population subgroups, the extent of viewing becomes important, with the beliefs of heavy viewers in the divergent group converging on the population mainstream.

The characteristics of an individual's experience that might be relevant could make a long and expandable list. For example, the pressures and experiences of lower SES lifestyles could provide confirmation of television messages about interpersonal mistrust and possibly about the prevalence of violence and fear of crime. Confirmation of television's messages about violence could come from exposure to news media or personal experience or personal knowledge of victimization. And confirmation/disconfirmation mainstreaming based on experience should not be limited to violence. The impact of television sex-role portrayals might be quite different for children whose mothers work outside the home, thus providing them with a counter-example to television's stereotyping of women.

Examples that follow the mainstreaming pattern are easy to find. For example, in the NORC 1975 sample (Gerbner et al. 1977*a,b*), a significant cultivation differential exists for interpersonal mistrust at middle-and upper-income levels, but not for those with low incomes. And when the NORC 1975 and 1978 samples are combined (Gerbner et al. 1980*b,c*), a significant correlation between viewing and interpersonal mistrust persists despite simultaneous controls for those with some college, but not for those without a college education, whose level of mistrust is uniformly high. And for nonwhites, whose interpersonal mistrust is relatively high, the partial correlation with television viewing is negative (instead of positive, as with whites), further suggesting a television role in converging viewpoints on the "mainstream." Likewise, for the three "anomia" items in the NORC 1977 survey, Gerbner et al. (1980*b,c*) report that the correlation with viewing is unaffected only for the some college subgroups, who again score lowest as a whole on anomia. Other results give some indication of mainstreaming patterns for some sex and age differences.

Confirmation (or "resonance") results seem less common, but several examples are available, starting with Doob and Macdonald's (1979) Toronto results on fear of victimization. Television viewing and fear were significantly related only in the high-crime city area; this may suggest that living in such an area provides confirmation that television's messages are relevant and to be believed. Note, however, that the less localized perceptions of violence derivable from newspapers and television news do not make a consistent difference in television influence (Gerbner et al. 1979*a,b;* Hawkins and Pingree 1980), although this leaves aside the issue of news directly influencing social reality.

Gerbner et al. (1980*b,c*) report a partial replication of Doob and Macdonald's results, although their subgroupings on income within cities and suburbs cannot provide as clean an indicator as the Toronto police statistics broken down for 210 individual patrol districts. Still, after the application of simultaneous controls, the relationship between viewing and a perception-of-danger index remained positive and significant for low-income city residents but was zero for high-income city residents for whom the questions were somewhat less relevant. However, income located no differences in the positive correlations for suburban residents, making the interpretation of these findings less clear.

No good evidence for the disconfirmation pattern has been found, even though one 1977 survey was designed to test for confirmation and disconfirmation relationships (Hawkins and Pingree 1980).

This is an apt point to emphasize that mainstreaming, confirmation (resonance), and disconfirmation should all be regarded as hypotheses. They have been applied post hoc to describe subgroup differences, and psychological processes have been proposed as explanations, but they have not been applied predictively. As Hirsch (1980; 1981) points out, one could easily argue (as Gerbner et al. originally suggested in earlier publications) that women, blacks, and the poor ought to be *most* affected by portrayals of television violence, since they are the subgroups most at risk in the real world and the most victimized on television. Yet, relationships between violence-related beliefs and television viewing are often weakest in these groups. In addition, given the large number of control variables on which subgroups could be formed, we must also evaluate these isolated subgroups against chance.

These hypotheses are complex and controversial enough (Gerbner et al. 1981; Hirsch 1981*b*) that strong tests require not just predictions but actually going beyond the basic three variables of the relationship. If interpersonal mistrust is high for low-education groups and unrelated to viewing, while mistrust rises to similar high levels for high-education groups as viewing increases, a "mainstreaming" interpretation would be greatly strengthened if we could demonstrate that television's messages are in fact at the "mainstream" point on the graph. Similarly, arguments for why viewing does not affect less educated groups would be more convincing if the rest of their symbolic environment were examined with the same care that content analysis gives to television.

The one other difference that might be explained by experience may be the difference between adolescent and adult samples. In general, the relationships are much weaker in the adult samples, although statistical significance is maintained by the much larger sample sizes. We argued before that children younger than about 10 may lack some processing abilities necessary to construct social reality from television. What we may have here instead is an application of what has become almost a communication research truism—that effects of communication are strongest when competing sources of information and preexisting knowledge are lowest. For adolescents, these social reality beliefs are still in the process of formation and thus more amenable to influence. Perceived relevance of the topic might play a role here as well. Morgan and Harr-Mazer (1980) report pronounced increases with age in the correlation of viewing and family expectations for adolescents, with the largest shift coming between eighth and ninth grades for projected age of family formation and between seventh and eighth grades for anticipated family size.

The interesting thing about all of this discussion is the implication of a relatively rational process and perhaps even an awareness of weighing and balancing information from different sources. Such weighing and balancing are generally presumed in information seeking but are foreign to our discussion of television's influence within the low-involvement model. There is room, however, for this apparent contradiction to be resolved, because emphasizing individual constructions of social reality separates television's influence into at least two steps. First, the individual must acquire from television various bits of information about actions and characterization and associations between these bits of information; this may be best explained as incidental learning within the low-involvement model. Second, the individual may use these bits of information to construct more general and integrated conceptions of the world, and it is probably here that the "higher" processes like inference or weighing television against other sources of information occurs.

Social Structure

There are at least two interesting studies in which the nature of the intimate social groups surrounding the individual seem to make a difference in television's influence. Rothschild (1979) categorized third- and fifth-grade children's peer groups as cohesive or non-cohesive, depending on whether all children nominated each other reciprocally or whether there was a non-reciprocal link. Since children could belong to multiple groups, they were categorized in four groups: purely cohesive, mixed (belong to both cohesive and semi-cohesive), purely semi-cohesive, or no group membership. It appears that group cohesiveness inhibits or may even reverse predicted cultivation influences for gender-related qualities, occupational aspirations, and interpersonal mistrust. Rothschild interprets her findings as indicating that the increased social interaction in groups provides a rich set of alternative information which may counteract television's messages.

Gross and Morgan (in press) report cultivation differences in the New Jersey panel survey of adolescents based on four characteristics of the family context. These are protectiveness (the tendency to restrict viewing), utility (parents' perception of the usefulness and reality of television), conflict over television viewing, and independence (students' access to television in terms of who selects what they see). High parental protectiveness, utility, and low conflict over television wipe out correlations with television for interpersonal mistrust, although not for the prevalence of violence. Those who have greater independence of access appear more cultivated for prevalence of violence, but only in the third year. The amount of family intervention capability suggested here is striking and encouraging.

Specific Viewing

Gerbner et al. (1979*a*) assert that two key assumptions underlie Cultural Indicators research:

> One is that commercial television, unlike other media, presents an organically composed total world of interrelated stories (both drama and news) produced to the same set of market specification. Second, television audiences (unlike those for other media) view largely non-selectively and by the clock rather than by the program. Television viewing is a ritual, almost like religion, except that it is attended to more regularly.

It is possible however, to argue separately with each of these assumptions. First, content analyses have not been reported by program type, despite the fact that different content types may present differences in patterns of action and characterization. And, if people vary in their mix of viewing different types of programs, then these content differences would make for differential influence across types of television content (see Hawkins and Pingree, 1981). Table 5 (Hawkins and Pingree 1981) presents the cultivation correlation from the Perth sample for total viewing and each of 10 independent types of television content coded from viewing diaries. Because the *amounts* people view of different types are not independent of each other, each correlation for a content type is partialed on all other viewing, so that these partials may be taken to represent the independent contribution of varying content types.

Table 5

Correlations Between Content Types and Belief in Mean World and Violence in Society (Hawkins & Pingree, 1980*a*)

	Mean World	Violence in Society
Television news	.04	−.03
Television documentaries	.01	.01
Situation comedies	.05	.06*
Crime-adventure shows	.06*	.16***
Drama	−.04	−.01
Music/variety	.03	−.02
Game shows	.03	.14***
Cartoons	.00	.14***
Children's shows	.00	.07*
Sports	.01	.02

Note: Each correlation coefficient reported for a specific program type is actually a partial correlation coefficient, with the total amount of viewing all other types of content partialed out.
*$p<.05$. ***$p<.001$.

While the relationships between viewing and social reality beliefs can only be indirect evidence of symbolic message differences between different content types, it is clear from table 5 that differences do exist. Even within the Cultural Indicators group's overall "dramatic programs" category, corresponding to our divisions of situation comedies, crime-adventure, drama, and cartoons, the types are not uniformly related to the social reality measures, and the most parsimonious explanation must be that the symbolic messages presented in these program types are not uniform with respect to social reality beliefs.

Hawkins and Pingree (1981) also examine the intercorrelations of viewing these program types and total viewing and report differences in selective versus habitual viewing of these content types, with crime-adventure, cartoons, and news viewed relatively habitually and comedy viewed much more selectively. Thus, two of the three content types most related to social reality (crime-adventure and cartoons) are predictable from other viewing, suggesting that the omnivorous habits of heavy viewership are responsible for such viewing. However, habitual television watching itself (as an unmeasured third variable) cannot be posited to account for the content-specific relationships, since comedy and news viewing are much more weakly or even negatively related to social reality, thus strengthening the causal arguments made earlier.

Summary

Figure 1 illustrates how these processes and the limited data relevant to them might fit together. The act of viewing television, even cumulatively over long periods of time, is only the beginning of television influence on social reality. And it should be obvious that we think it is crucial for message-systems analysis to move down at least to the level of content types. The next step in television's influence is learning (probably incidentally) various bits and pieces of action, characterization, and so on, and their associations with one another and with demographic characteristics. In determining how well this learning proceeds, such factors as attention to television, memory capacities, focusing strategies, and involvement may be important conditional or intervening variables (and we have drawn the arrow from these conditions to the link between viewing and learning and not to learning itself, to signify this intervention). We suspect that the actual construction of social reality is a separate following step, conditioned by such things as inference skills, social structures such as family and friends, and the competing or complementing information of other experience (we also note here that these conceptions of reality can be *directly* influenced by experience as well). Finally, if social reality has any importance at all, it should serve as a guide to actual behavior. What is needed now is work that takes account of these separate steps and treats each of them as an empirical question.

Summary

The evidence is relatively supportive of television's influence on *some* aspects of social reality, especially in areas related to violence and for the demographic measures on prevalence of violence and the value-system measures on interpersonal mistrust. There are also suggestive evidence for other areas of social reality (sexism, ageism, family structure) and a small amount of experimental and longitudinal evidence for television as the cause of certain social reality constructions. On the other hand, some relationships, especially those between television viewing and value-system measures, are seriously attenuated, made curvilinear, or even made negative by the application of simultaneous controls.

We should point out that relationships that are significant between television viewing and social reality are generally on the weak side of moderate in strength. It would be a considerable overstatement of the area to assign preeminence to television as a shaper of culture. However, asserting the opposite—that television's contribution is trivial—likewise misses some important points.

First, the cultivation hypothesis (and the whole cultural indicators approach) has the joint disadvantages for theory testing of being both global and subtle. Those characteristics of television content hypothesized to be important are meanings present only *implicitly* and only *cumulatively* across the sum total of all television messages. Quite apart from whether such implicit meanings are extracted the same way by all or even most members of a population, testable hypotheses depend on the researcher's own interpretation of the most likely meaning. But researchers, after all, bring a particular vision of their own to television, and this vision could lead to interpretations of messages slightly different from those of most members of the mass audience, thus systematically deflating any observable television effect.

As if these problems were not enough, it should be obvious that present measurements of television viewing and of what people believe about the world, the reality they have constructed, are extremely crude. What has been measured as interpersonal mistrust and prevalence of violence probably has *something* to do with the social

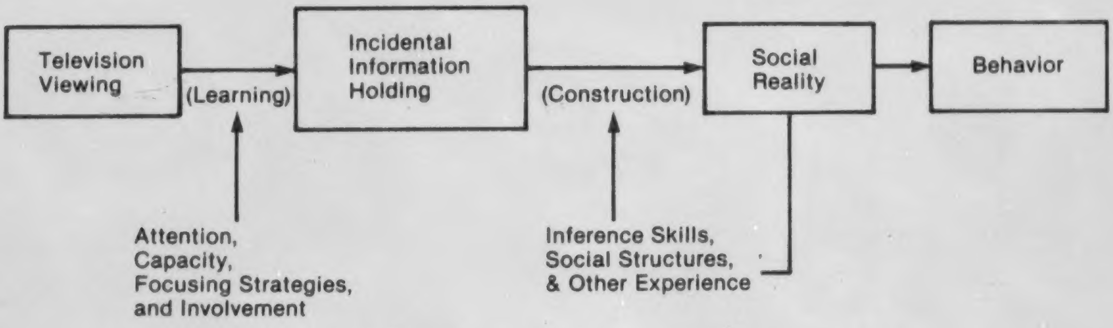
Television Viewing
(Learning)
Incidental Information Holding
(Construction)
Social Reality
Behavior
Attention, Capacity, Focusing Strategies, and Involvement
Inference Skills, Social Structures, & Other Experience

Figure 1. A model of conditions in cultivation.

reality potentially cultivated by television, but they could be much better. Happily, there are indications that measurement in this area is improving, as with Doob and Macdonald's (1979) much greater variety of questions about violence.

It is probable that television's effect on social reality is underestimated by the relatively weak relationships. It should also be clear, however, that the theory that has directed the research needs to be changed. Television's influence on individual constructions of reality can no longer be described as direct but must be viewed as a complex process that takes place within individual contexts. We need to modify the theory to recognize the conditional nature of television's influence: Under some conditions, television does seem to contribute to constructions of reality, but in others it does not. A new focus on the conditions that specify effects would encourage a deeper interest in the viewing situation itself as well as the context of viewing. Are heavy television viewers watching television in the same way as light viewers? Are they more or less attentive, selective?

The theory would similarly be enriched if more attention was paid to explanations for *how individuals use television* to construct social reality. Research findings suggesting conditional effects will be much better explained when we have some idea of the processes involved in the construction of social reality.

Appendix

It has been apparent in reviewing this research that not everyone appreciates the importance of tying content of television to a study of how that content might affect social reality, and it has been obvious that hardly anyone (ourselves included) has been analyzing their data properly. In this appendix, we present some methodological/procedural principles that seem to be essential for meaningful results.

1. Assessing Content

First, some sort of content analysis is necessary so that the existence of a pattern can be established and documented. Some failures to find a television viewing-social reality relationship probably happen because the pattern isn't there (and the researcher assumed it but didn't test for it) or because the researcher's view of the meaning of certain events and relationships presented on television is peculiar, not something that many others would see. It is the carefully documented and relatively objective patterns in content that, when used to construct questions about social reality, give this approach its advantage over other survey research in ascribing a causal direction to television.

Related to this is the issue of pattern frequency. It's probable that a certain level of a set of events must be present for the pattern to influence an individual's social reality. Since this issue has not previously been raised, we can only guess at what that level is, but it seems worthy of study in its own right.

In addition, there are clear variations in patterns across types of television content: Crime-adventure programs are more violent than situation comedies or daytime serials. The television diet of viewers is not always going to be the same as the mix of what is available. To the extent that this is true, researchers who use more specific viewing measures, such as television-use diaries, will have more meaningful results. Exposure measures need to be capable of specifying at least this level of detail, and it is quite likely that better understanding of viewing situations (attention, selectivity, and so on) will lead to better understanding of whether and how television content influences social reality.

2. Controls

Most researchers who routinely study television effects control for other variables. It is obvious that demographic characteristics such as social class could be accounting for both television viewing and a violent construction of reality. It is not so obvious that applying controls separately is not sufficient to control for spuriousness. There are at least some areas of social reality where simultaneously applied controls reduce a previously significant relationship below significance, when these same controls did not individually affect the significance of the relationship. Thus, it is crucial to control *simultaneously*; controls applied one at a time may each account for a separate, small piece of the variance, leading the researcher to conclude that the relationship is general and holds despite controls.

However, finding that simultaneously applied controls are effective in dramatically altering a relationship or reducing it below conventionally accepted levels of significance is *not sufficient* evidence for calling the relationship spurious, for several reasons.

First, controlling for a third variable or a set of third variables leaves us with an independent (of those other variables) relationship between television viewing and social reality. Assuming that the set of control variables is sufficient (never demonstrable), this independent relationship can be regarded as the whole story when the control variables are causally prior to both viewing and social reality. It is sometimes possible to make this assumption, but more often it is not. Whenever there is a possible reciprocal relationship between a third variable and television viewing or social reality, or whenever the third variable may intervene, the results of an analysis that controls for third variables are likely to be an underestimate of the true relationship. In such a case, the control for third variables still leaves the independent relationship between viewing and social reality but improperly removes any indirect causation through third variables or reciprocal relationships. Instead of using these controls to provide "yes" or "no" answers to simple hypotheses, we would be much better off to do some complex thinking about theoretical relationships both before applying controls (to direct them rationally) and after (to take advantage of the shifting relationships as a guide to more adequate theory).

A second problem with controls arises out of our *routine* use of controls. It is easy to forget that demographic characteristics are reifications of very meaningful processes. They are locators that are simpler to use than the processes themselves, but as demographics they mean nothing. For example, if we find that sex can change a television viewing-social reality relationship, we still need to come up with an *explanation* or a process to account for the effect of sex on this relationship. Sex in itself does not offer us any insight; rather, the explanation lies with some behavior pattern or set of experiences or situations that is located by sex. And this process should interest us. Researchers who remember this are much likelier to be interested in the meaning of a relationship that is changed by a control variable and ultimately to gain a richer understanding of how people use television.

Third, wholesale controlling can obfuscate potential conditional relationships. For example, if a control variable such as socioeconomic status reduces a viewing-social reality relationship to nonsignificance, it would usually be concluded that socioeconomic status really accounts for both and that there is no true relationship. But it could be that the expected relationship holds in one social class and works exactly the opposite in the other. That such possibilities are often unexamined reflects a use of controls that is not theoretically based; theory building is the poorer for it.[6]

Thus, it is crucial in this area to control for third variables. It is essential to apply these controls simultaneously. But it is also imperative that the use of controls be directed by theoretical systems so that the conditions under which individuals use television to construct social reality can be illuminated.

In sum, we are suggesting as guidelines for research on television's influence on constructions of social reality that researchers (1) need to establish the presence of relevant content and exposure to that content; and (2) need to conduct conditional analyses using simultaneous controls that are directed by theory. Further, we suggest that the original hypothesis that television's peculiar distortions of social reality directly, although subtly, affect heavy viewers' constructions of social reality, needs to be rephrased. We should ask, "How does an individual construct social reality?" and "What sorts of thought processes by the individual and what real-world experiences are necessary for television to contribute to constructions of social reality?"

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[6] Readers wishing to pursue the logic of third-variable analyses further would do well to consult the chapter in Babbie (1979) on the elaboration model as a carefully explained introduction to the problem.

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Television and Prosocial Behavior

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The Importance of Learning Through Observation

People learn by watching others. Indeed, this is one of the fundamental ways by which people learn new behavior. By watching others, people who enter new occupations learn skills and attitudes necessary to their new job. Also by watching others, people can learn the complex skills involved in new sports and leisure-time activities. Such learning often involves a great deal of effort and concentration. Other such learning, however, takes place quite automatically. Think of speech as an example. The majority of the words we use are learned without any conscious effort. Simply by observing others, people acquire the vocabulary and many of the rules of grammar that they use. People also acquire their accents and styles of delivery by observing others. Thus, whether people use a wide or a more limited range of expressive gestures when they talk depends to a large extent on the particular models they watched when they were learning the language. A lot of this learning took place without their even being aware of it.

Children, in particular, are likely to learn by watching others. They are at the most formative period in their lives when they are striving to gain some understanding and mastery of the social world that they inhabit. By watching others and then imitating what they have seen, they can learn the "rules" of social behavior. While adults have often learned to distinguish between who is appropriate and who is inappropriate to watch and learn from, young children often have not.

Research on the importance of observational learning has substantially advanced our understanding of human behavior in a variety of areas, including: aggression (Bandura 1973), altruism (Rushton 1980), cognition (Rosenthal and Zimmerman 1978), deviance (Akers 1977), personality (Mischel 1981), and psychopathology (Wilson and O'Leary 1980), to name but a few.

Of particular importance is the research that confirms that watching others leads to learning the norms of behavior and the emotional responses that people have to each other (Bandura 1969, 1973, 1977; Rushton 1980). One of the most important implications of this research pertains to television. If one of the main ways in which people learn is by observing others, then it follows that people should learn a great deal from viewing others on television. Television provides people with access to a very wide range of observational learning experiences. By simply sitting in front of their television sets in their own living rooms, individuals can observe a vast array of other persons behaving in response to a variety of situations. In this way, television can have diverse effects, depending on the content of what is watched. It can be an important disinhibitor and teacher of antisocial norms of behavior, a matter of social concern when we realize that many characters on television behave in antisocial ways (Gerbner and Gross 1976). But it also is capable of promoting valued cognitive and social development (Rushton 1977, 1979).

The question of whether the antisocial behavior portrayed on television influences the behavior of viewers has been a question of concern for more than two decades now (Himmelweit et al. 1958). Many government inquiries as well as scholarly researchers have investigated this question, and a vast literature has emerged. Although there are still dissenters (e.g., Kaplan and Singer 1976; Halloran 1978), the weight of this evidence appears to demonstrate that television portrayals of violence do increase the amount of antisocial behavior in society.

(Comstock et al. 1978; Liebert and Schwartzberg 1977; Murray and Kippax 1979; *Ontario* 1977; Parke et al. 1977; Rushton 1980).

While there has long been a research interest in the possible harmful effects of media violence, the other side of the coin—the potential for good—has only recently been investigated. Notwithstanding its recency, this research literature is now burgeoning and appears to demonstrate that television does have the power to influence prosocial behavior. The term "prosocial" is used to specify that which is socially desirable and which in some way benefits another person or society at large. This definition naturally involves a value judgment based on the wider social context.

There are four types of prosocial television content. The first type of programing is altruistic in nature and includes such behaviors as generosity, helping, and cooperation. The second concerns friendly behavior. The third involves self-control behaviors, such as resisting temptation and delaying gratification, and the fourth involves adults and children coping with their fears. Some of the studies examined television effects in laboratory situations, while others used more naturalistic environments; the results from both settings come to similar conclusions. Nonetheless, there is a clear demarcation between the two types of testing environments. The term "television" is used here in the widest sense; i.e., it includes specially constructed videotapes used for experimental or therapeutic purposes in addition to commercial television programs. The nature of the programing is clearly specified throughout the review.

The Effects of Showing Altruistic Behaviors on Television

Fifteen studies will be reviewed; seven are "laboratory" studies, and eight are "naturalistic." All seven of the laboratory studies are concerned with the effects on children (Bryan 1971; Bryan and Walbek 1970*a*, 1970*b*; Collins and Getz 1976; Elliot and Vasta 1970; Rushton and Owen 1975; Sprafkin et al. 1975). Of the eight naturalistic studies, six were also concerned with children (Ahammer and Murray 1979; Friedrich and Stein 1973, 1975; Friedrich-Cofer et al. 1979; Paulson 1974; Tower et al. 1979), whereas two were carried out with adults (Loye et al. 1977) and youths (Moriarty and McCabe 1977).

Laboratory Studies of Altruism

In a series of experiments, reviewed by Bryan (1975, e.g., Bryan 1971; Bryan and Walbek 1970*a*, 1970*b*), several hundred 6- to 9-year-old children, of both sexes, were shown 5-minute videotapes of a child playing a bowling game, winning gift certificates, and donating or not donating some of these gift certificates to a charity. Subsequently, the children were watched through a one-way mirror to see how much of their winnings they donated to a similar charity. The results showed that children were strongly influenced by what they had seen on television. Children who had watched generosity on the videotape gave more of their certificates to the charity than did those who had watched selfishness portrayed. Other studies, using similar procedures, have replicated Bryan's findings. Elliot and Vasta (1970) showed that 5- to 7-year-old children were influenced by television models to share both candy and money. Rushton and Owen (1975) found that 8- to 10-year-old British children were influenced to donate tokens to a charity by watching television models do so.

The film material used in the above studies was not like that produced for commercial purposes, however. It lasted for only 5 minutes and showed one person acting a number of times in just one way (e.g., being generous) in one highly specific situation. In addition, the children who watched were then tested in exactly the same situation in which they had seen the model act. Sprafkin et al. (1975) went further than the above studies and conceptually replicated the previous findings with a highly successful commercial television program, *Lassie*. They divided 30 5-year-old, white, middle-class children into three groups and showed each group one of three half-hour television programs, complete with commercials. A prosocial *Lassie* program involved Jeff, Lassie's master, risking his life by hanging over the edge of a mineshaft to rescue Lassie's pup. A neutral *Lassie* film and a neutral non-Lassie film made up two control groups. After watching the programs the children were taken to another room where they could earn points toward a prize by playing on a game. During the course of playing the game, they had an opportunity to aid puppies in distress by calling for help by pressing a "help" button. Pressing the "help" button, however, would interfere with earning points toward the prize. The average time spent pressing the "help" button for children who had watched the prosocial Lassie was 93 seconds, whereas in the two neutral conditions it was 52 and 38 seconds respectively. Thus, this study supported the previous laboratory studies using a program from a highly successful commercial series.

Collins and Getz (1976) also carried out a laboratory investigation using a regular program complete with commercials. They edited a television action-adventure drama made for adults, such that in one version a model responded aggressively to provocation and in another version responded constructively. Fourth, seventh, and tenth graders saw one of these versions or a wildlife documentary control. They were then given an opportunity either to help or hurt a fictitious peer, who they were told was trying to complete a task, by either pressing a "help" button which shut off a distracting noise or a "hurt" button which increased it. Children of all ages who had seen models of constructive coping showed greater prosocial responding than subjects in the other two conditions, i.e., they gave more "help" responses than children who viewed either the aggression or the control programs.

Naturalistic Studies of Altruism

Stein and Friedrich (1972) (see also Friedrich and Stein 1973) carried out a study of prosocial media effects with 97 nursery school children. First, the children's naturally occurring free-play behavior was coded into categories such as "aggressive," "prosocial," and "self-control." The children were then randomly assigned to one of three groups and exposed to 4 weeks of selected television. The first group watched aggressive television films, such as *Batman* and *Superman* cartoons. A second group watched "neutral" films such as children working on a farm, and a third group watched *Mister Rogers' Neighborhood,* a prosocial education television program that stresses cooperation, sharing, sympathy, affection, and friendship. During the 4-week exposure to one of the three television diets, the children's free-play behavior was recorded by observers who were "blind" as to experimental condition.

The results demonstrated that the programs did have some effect on the children's subsequent aggressive or prosocial behavior. The aggressive television content led to increased interpersonal aggression for those children who were above average in such aggression at baseline. The effects, however, did not generalize to a 2-week re-test. While exposure to the prosocial television content led to increased prosocial behavior, it did so only in the children from the lower half of the socioeconomic status distribution. Here too, however, the results failed to extend to the 2-week re-test. Both the aggressive and prosocial films had stronger effects on the measures of self-control as we shall see when we come to that section.

In a subsequent study with *Mister Rogers' Neighborhood,* Friedrich and Stein (1975) randomly assigned 73 preschoolers to one of five conditions. One group of children watched four "neutral" programs about nature and other topics unrelated to interpersonal behavior. The other four groups saw four programs from *Mister Rogers' Neighborhood,* chosen to form a dramatic sequence. In this sequence, a crisis arose in which one of the characters feared that she would be replaced by a fancy new visitor. Action centered on the attempts of friends to understand her feelings, reassure her of her uniqueness, and help her. Children watched the television programs in groups of three or four over 4 days. Results indicated that, when the children were asked questions such as "How do friends show they like you?," those who had watched the prosocial films reported more ways of showing how friends demonstrated affection than children who had watched neutral films. This was true both in situations that were similar to those in the *Mister Rogers' Neighborhood* program and also to those that involved new situations. On a behavioral measure of helping another child in a quite different context, there were no overall differences between those children who had watched prosocial television programs and those who had watched the neutral television programs. It was found, however, that, if watching the prosocial television had been paired with direct training to be helpful through "role-playing" techniques, the children were more helpful than those who had been given the training but no diet of prosocial television. This suggests the possibility that prosocial television might be used as an adjunct to other training procedures when attempting to teach or enhance prosocial tendencies in children—as nursery school teachers and parents might well wish to do.

This latter conclusion gains additional credence from a study by Friedrich-Cofer et al. (1979). They found that even 8 weeks of prosocial television, by itself, did not influence the behavior of urban poor children. However, if the prosocial television was augmented with themes from *Mister Rogers' Neighborhood* acted out in class, then significant behavioral differences in subsequent prosocial behavior were found compared to control groups.

Paulson (1974) divided 78 male and female 4-year-olds into a "view" and "nonview" condition in their regular day care centers. The "view" children watched several hours of *Sesame Street* over a number of days for 1 hour per day. The "nonview" children were not shown this special diet of television. The *Sesame Street* programs had nine special "inserts," all concerned with children cooperating with one another to achieve goals (e.g., "Gordon and Bob discover that it is possible to put toys into a box only when one holds the lid while the other inserts the toys"). The program's impact was measured in three tests, including, first, a picture recognition test to see whether or not the children were familiar with the content of the experimental inserts (e.g., "pick the picture in which the children are cooperating"). The second tests were situational (e.g., one child was given paint and another brushes with instructions to "paint a picture"). Scored were both specific cooperation, as modeled directly from the solution presented on *Sesame Street,* and general cooperation, based on any cooperation whatsoever during the test. The third test was free-play behavior. Prosocial television was found to affect both knowledge and specific cooperation, although not general cooperation or free play.

Tower et al. (1979) exposed three groups of preschoolers to 2 weeks of either prosocial television films, such as *Mister Rogers' Neighborhood* and *Sesame Street* or to neutral television fare. Children who viewed *Mister Rogers' Neighborhood* tended to engage in more cooperative play (over baseline) than those in the other viewing conditions.

In a study with 183 married couple volunteers, Loye et al. (1977) used the method of participant observation to assess the cumulative effects over 5 days of one of five diets of television programing. These were (1) high in prosocial or "helpful" content; (2) high in violent or "hurtful" content; (3) neutral or light entertainment content; (4) mixed, i.e., both prosocial and violent content; and (5) natural, i.e., unedited content. Viewing took place between 7:00 p.m. and 11:00 p.m. on seven consecutive evenings, Monday through Sunday. Programs were chosen from the schedules of 28 channels available via the local cable television network. In all groups, each husband watched the television programs selected, and each wife worked as an observer reporting on his daily behavior. Examples of "helpful" and "hurtful" behavior were "Husband took 5-year-old son for a walk on the beach while I rested" versus "Husband lost temper while driving the car." Wives kept confidential daily reports of all instances of husbands' "helpful" and "hurtful" behavior. Results showed no significant differences among viewing groups in helpful behavior. For hurtful behavior, however, differences among the groups were found. The prosocial group showed the least hurtful behavior; next lowest was the neutral group. The two highest levels of hurtful behavior were found in the natural and violence viewing groups. Effects of television content were also found on ratings of mood. With baseline scores covaried out, viewers in the violence group showed an increase in aggressiveness, whereas viewers in the prosocial group showed a decrease.

A particularly ambitious and realistic study was carried out by Moriarty and McCabe (1977) with 259 children and youth engaged in organized team sports. Participants in Little League baseball, lacrosse, and ice-hockey were included. Both the antisocial and prosocial behavior of the players on the field, before, during, and after experimental treatment were measured. The experimental treatment consisted of providing antisocial, prosocial, and control video presentations of the relevant sport to the randomly assigned teams. The prosocial material consisted of (1) altruism—helping, encouraging, and team work; (2) sympathy—compassion, pity, and caring for another's plight; (3) courtesy—displays of respect; (4) reparation—correcting a wrong or apologizing; and (5) affection—any overt expression of positive feelings toward another. The results indicated that exposure to the prosocial content clearly increased the level of prosocial behavior for the hockey and lacrosse players, although not for baseball players. Interestingly, the showing of the antisocial programs had no effect in this study.

Finally, another study assessed the relative influence of role playing and prosocial television content in facilitating altruism. Ahammer and Murray (1979) showed Australian kindergarten children television programs, such as *Lassie*, *I Love Lucy*, *The Brady Bunch*, and *Father Knows Best*. On the basis of a content analysis, some of these programs were designated as high in prosocial television, while others were designated as neutral. The prosocial programs had a high frequency of expressing concern for others' feelings, sympathy, task persistence, and explaining feelings of self or others. The children were either assigned as a class to a "prosocial" viewing condition or to a "neutral" viewing condition. The viewing took place ½ hour per day, 5 days per week for 4 weeks. The children were pre-tested on a variety of measures 1 week prior to the onset of television viewing and were post-tested on these same measures 1 week after the conclusion of training. The results indicated that the prosocial television condition was associated with increases in a situational test of helping (for boys only) and increases in a test of cooperation (for both boys and girls). Helping was measured by the child's willingness to forego playing with some attractive toys in order to help another child complete a task which consisted of placing marbles in a box one at a time. Cooperation was measured by the number of candies that the child allowed his or her partner to win while playing a game. Thus, observation of standard television programs in which the characters displayed concern for others was effective in facilitating altruism in specific situational tests quite dissimilar from the situations seen on the programs. Of interest in this study was the finding that role-playing techniques were even more effective in facilitating altruism than was the prosocial television. This latter finding, of course, does not detract from the fact that prosocial television had independent effects. It suggests that these effects can be greatly increased if other aspects of the environment are supportive.

The Effects of Showing Friendly Behaviors on Television

Seven studies are reviewed in this section; all were carried out with nursery school children. They are divided into two laboratory studies (Fryear and Thelen 1969; Gorn et al. 1976) and five naturalistic ones (Coates et al. 1976; Fechter 1971; Keller and Carlson 1974; O'Connor 1969, 1972).

Laboratory Studies of Friendly Behavior

Fryear and Thelen (1969) assigned boys and girls of nursery school age to one of two main television viewing groups: One observed an adult demonstrating "affectionate" behavior toward a small stuffed clown, and a second served as a control group. Children were subsequently given an opportunity to play with a group of toys which included the small clown. An observer sat in the back of the room and watched to see whether the child imitated the affectionate behavior toward the toy. Children who watched television films of affectionate behavior were subsequently more likely to express similar affection than children who had not seen such behavior on television.

Gorn et al. (1976) carried out a study in Canada to investigate whether prosocial television content could increase nursery school children's friendliness toward ethnic minorities. After being exposed to special *Sesame Street* inserts containing nonwhite children, a sample of 3–5-year-old white children showed a strong preference for playing with nonwhites as opposed to whites. This sharply contrasted with the preferences of a control group not exposed to these inserts. The respondents, all English Canadians, also viewed inserts with a French Canadian boy and indicated an equally strong preference for him after seeing the special inserts, again in comparison to the contrasts.

Naturalistic Studies of Friendly Behavior

O'Connor (1969) conducted a dramatic and potentially important study to see if television programs could be used to enhance social interaction among those nursery school children who tended to isolate themselves from their peers. Thirteen severely solitary children were chosen for the study. These children were interacting on fewer than 5 of 32 possible interactions reliably observed over an 8-day period. One group of these isolated children then saw a specially prepared sound-color film shown over a television console. This film portrayed a sequence of 11 scenes in which children interacted in a nursery school setting with reinforcing consequences ensuing. All the scenes were accompanied by a female narrator describing the actions of the model and the responses of the other children. For comparison purposes, a second group of children were shown a film about dolphins. The results were dramatic. Children who had watched the film about others engaging in social interaction increased from their baseline score of an average of nearly 2 interactions out of the 32 possible to an average of nearly 12 interactions out of the possible 32. The control group showed no increase over their baseline scores. A followup at the end of the school year showed that the changes were durable over time.

In a subsequent study, O'Connor (1972) selected 33 social isolates from four nursery school populations according to both teacher ratings and behavioral samples obtained by trained observers. In a 2 x 2 factorial design, half of the children viewed a specially constructed 23-minute modeling film depicting appropriate social behavior, while the other half viewed a control film. Half of the subjects in each film condition then received social reinforcement, contingent upon the performance of peer interaction behaviors. Modeling was shown to be a more rapid modification procedure than was shaping-through-reinforcement and resulted in more stable social interaction patterns over time.

In a study of similar nature, Keller and Carlson (1974) showed 19 socially isolated preschoolers either four 5-minute videotapes in which social skills (e.g., how to socially reinforce peers) were modeled (treatment) or four sequences of a nature film (control). The frequency with which subjects dispensed and received social reinforcement and the frequency of social interaction increased in the treatment group.

Fechter (1972) carried out a study with mental retardates (mean age, 11 years; mean IQ, 36). One group watched a 5-minute film of a 12-year-old child beating up a large inflatable Donald Duck doll. Another group viewed a 5-minute film of the 12-year-old child playing in a friendly manner with the same doll. The behavior of the retardates was then observed for 5 minutes in the experimental room and for 30 minutes on the ward and coded either as friendly (e.g., talking) or aggressive (e.g., fighting) by observers who were not aware of which films the patients had seen. In the ward, the number of aggressive responses increased slightly (but significantly) after the aggressive film and decreased following the friendly film. The change in the number of friendly responses in the ward was not significant, however.

Coates et al. (1976) assessed the effects of both *Sesame Street* and *Mister Rogers' Neighborhood* on 32 preschool children. The frequency of these children's behaviors was recorded into one of three categories: (1) *Positive reinforcement*—giving positive attention such as praise and approval, sympathy, reassurance, and smiling and laughing; giving affectionate physical contact such as hugging, kissing, and holding hands; giving tangible reinforcement such as tokens, prizes, and other objects; (2) *Punishment*—giving verbal criticism and rejection such as criticism, negative greetings, obvious ignorings, and sarcasm; giving negative physical contact such as hitting, biting, and kicking; withdrawing or refusing tangible reinforcement such as taking away a toy; and (3) *Social contact*—any physical or verbal contact between a child and another child or adult.

Following these baseline measures, children watched either 15 minutes of *Sesame Street* or 15 minutes of *Mister Rogers' Neighborhood* for each of 4 days. These programs had previously been content analyzed for the frequency of occurrence of positive reinforcement and punishment. After watching the programs, the children were observed, and the frequency with which they behaved in any of the categories was recorded. In addition, a 4-day followup was undertaken. The results showed that the television programs affected the children's social behavior in a significant manner, particularly on the immediate postviewing tests. For all children, *Mister Rogers' Neighborhood* significantly increased the giving of positive reinforcement to, and social contacts with, both other children and adults. For *Sesame Street*, the effects were only found for children who had low baseline scores.

The Effects of Showing Self-Control Behaviors on Television

Six studies are reviewed here. All were carried out with children. Five of them are laboratory studies (Stein and Bryan 1972; Walters et al. 1963; Wolf 1973; Wolf and Cheyne 1972; Yates 1974); one is a naturalistic study (Friedrich and Stein 1973).

Laboratory Studies of Self-Control Behavior

Walters et al. (1963) first forbade 5-year-old male kindergarten children from playing with some rather attractive toys. The children were then divided into three groups. Two groups of youngsters observed a film in which a child model, a boy of the same age as themselves, played with the toys which the subjects had previously been forbidden to touch. One group observed a film in which the boy model was "rewarded" by his mother for playing with the toys; one group observed the model "punished" for playing with toys. The remaining group constituted a control group, who saw no film. All the children were subsequently left alone in the experimental room with the forbidden toys for 15 minutes, and their behavior was observed. Both in terms of the length of time before children gave in to the temptation to touch the forbidden toys and in terms of the total number of times the child touched the toys, there was a clear effect of the experimental treatment: Observation of the model-rewarded film made it harder for the children to resist the temptation and observation of the model-punished film made it easier for them to resist.

Stein and Bryan (1972), in a laboratory experiment, explained to 80 8- and 9-year-old girls the rules by which they could win money by playing an electronic bowling game. Before playing the game, the children watched a television program in which they saw a same-sex peer model playing the same game. This peer model either behaved in violation of these rules or in accordance with them. Children who observed the transgressing model cheated more than twice as much as those who observed a model adhering to the rules.

Wolf and Cheyne (1972) carried out an experiment with 7- to 8-year-old boys. First, the children were taken to a games room and allowed to play with some toys. They were forbidden, however, to touch or play with one particularly attractive toy. It was found that an average of 4 minutes and 40 seconds would go by before an average boy in this situation would touch the toy. However, if the boy had watched a television program of another same-age boy playing with similar toys and the television child had *not* touched the toy, then the average boy would wait nearly 8 minutes before transgressing. If, on the other hand, the television program had shown another boy violating the rule and touching the forbidden toy, then the subject would be likely to touch the toy in less than 3 minutes. Very similar results were found when the measure of the child's resistance to temptation was based on the *length* of time he played with the toy. The average boy would play with the forbidden toy for about 1 minute out of the 10 that he was observed. If he watched a television program depicting violation of the rules, then he would play with the forbidden toy for nearly 4 out of 10 minutes. If, however, he watched a television program showing adherence to the rules, he would touch the forbidden toy for only about 7 seconds. Wolf and Cheyne (1972) brought the boys back 1 month later and put them into the same situation. The results still showed an effect for the television program. Whereas children who had seen no television film 1 month earlier managed to resist the temptation for nearly 6 minutes, boys who had seen a model giving in to the temptation only resisted for 4 minutes. In this 4-week re-test, no effect was found for the "self-controlled" model, however. These results were replicated by Wolf (1973).

Another form of self-control is the ability to delay gratification to a later point in time. Yates (1974) carried out a study with 72 8-year-old New Zealand children. Baselines were established by asking children if they would prefer a small reward, such as money, immediately, or a larger one by waiting for 7 days. Some time later, some of the children watched television programs of an adult female model exemplifying high-delay behavior and/or verbalizing reasons for delaying gratification. Other children did not watch such programs. Compared to controls, children who had watched the television programs showing delay of gratification were subsequently more likely themselves to choose to delay their gratification for a larger reward later. Furthermore, when the children were retested 4 weeks later, their behavior still showed the effects of the exposure to the television film.

Naturalistic Studies of Self-Control Behavior

In a study described previously in the section on altruistic behavior (Friedrich and Stein 1973), the prosocial television program *Mister Rogers' Neighborhood*, the aggressive television programs of *Superman* and *Batman*, or neutral fare was shown to 93 4-year-old nursery school children for a 4-week period. During this time, their naturally occurring free-play behavior was observed. Three categories of self-control behavior were recorded: obedience to rules, tolerance of delay, and persisting at tasks. In regard to the obedience-to-rules category, aggressive films decreased this behavior as compared with neutral films, while the prosocial films increased it. In regard to tolerating delay, the aggressive films significantly decreased such behavior compared with both the neutral and prosocial conditions, which did not differ from one another. Furthermore, these particular effects were maintained across the 2-week re-test. Finally the prosocial television content increased persistence at tasks over the neutral and aggressive films on both immediate and later observations.

The Effects of Showing People Coping With Their Fears on Television

Fourteen separate studies are reviewed to illustrate the power of televised presentations to modify people's fears. Five of the studies were laboratory investigations, three of which were concerned with children (Bandura and Menlove 1968; Hill et al. 1968; Weissbrod and Bryan 1973) and two with adults (Bandura and Barab 1973; Bandura et al. 1969). Nine of the studies involved the use of videotape and film material in actual therapeutic contexts, five with children (Melamed et al. 1975; Melamed and Siegel 1975; Melamed et al. 1975; O'Connor 1969, 1972) and four with adults (Jaffe and Carlson 1972; Mann 1972; Shaw and Thoresen 1974; Wincze and Caird 1976).

Laboratory Studies of Coping With Fear

The first study concerns young children who were inappropriately afraid of dogs. Bandura and Menlove (1968) first measured 3- to 5-year-old children's willingness to approach and play with a cocker spaniel on a number of occasions, to determine which children were afraid of the dog. Some children were then shown eight 3-minute film programs over an 8-day period in which they saw other children playing with dogs. Another group of fearful children were shown movies of Disneyland instead. After watching these films, the children were given opportunities to approach live dogs. Previously fearful children who had watched other children showing courage were now much more likely to approach and play with the dogs than the children in the control group were. Furthermore, this reduction in fear generalized to dogs quite different from those seen in the film and was maintained over a 4-week re-test period. A similar study by Hill et al. (1968) obtained similar results with similar age children using a large German Shepherd dog as the film stimulus. Eight of nine boys in a film group were subsequently willing to approach, pet, and feed the live German Shepherd dog, while only three of nine boys in the control group did so, despite high levels of fear in each group prior to testing.

A study by Bandura et al. (1969) investigated whether film programing could help adolescents and adults reduce their fear of snakes. Only those who reported having a severe fear of snakes took part. For example, their dread of snakes was actually so severe as to interfere with their ability to do gardening or go camping. These people were then shown films of young children, adolescents, and adults engaging for 35 minutes in progressively threatening interactions with a large king snake. Behavioral measures were then taken in the presence of live snakes. The findings were clear. People who had watched the film reduced their fears significantly. It might be noted that the behavioral measures were quite stringent and included actually holding the snake in the hands. The ultimate test (which 33 percent of the subjects performed) included allowing the snake to lie in their laps while they held their hands passively at their sides. Bandura and Barab (1973) subsequently provided a clear replication of these findings.

Weissbrod and Bryan (1973) attempted to see whether similar techniques would succeed with 8- to 9-year-old children who had indicated an extreme fear of snakes on a fear inventory and also refused to pet a snake during a pre-test. These children watched a 2½-minute videotaped sequence involving a model either approaching a live 4-foot boa constrictor (the experimental group) or a stuffed 5-foot toy snake (the comparison condition). All children watched their respective films twice through and then, 2 days later, watched them twice through again. Following this second showing of the film, the children were taken to an aquarium which housed a 4-foot boa constrictor and asked to touch, then pet, and then hold the snake. The experimental group were able to go further into the sequence than the control comparison group and, furthermore, maintained their superiority on another test taken 2 weeks later. For example, while none of the 10 children in the control group was able to actually handle the snake 2 weeks after watching a "neutral" film, 11 out of the 40 children in the experimental condition could.

Naturalistic Studies of Coping With Fear

Melamed and Siegel (1975) showed 60 children age 4 to 12 who were about to undergo elective surgery for hernias, tonsillectomies, or urinary-genital tract difficulties either a film of a child being hospitalized and receiving surgery or an unrelated control film. The experimental film was 16 minutes in length and consisted of 15 scenes showing various events that most children hospitalized for elective surgery encounter. Both groups received extensive preparation by the hospital staff. State measures of anxiety, including self-report, behavioral observation, and Palmar Sweat Index revealed a significant reduction of preoperative (night before) and postoperative (3–4-week postsurgery examination) fear arousal in the experimental as compared to the control group. In addition, parents reported more problem behavior in the children who had not seen the modeling film.

The therapeutic value of film modeling has been demonstrated in a number of other studies. O'Connor (1969, 1972) used film models to decrease children's fear of social interaction. Jaffe and Carlson (1972) and Mann (1972) treated test-anxious university and high school students with videotaped modeling procedures and found significant improvement on performance measures. Shaw and Thoresen (1974) demonstrated that specially constructed films can effectively reduce adults' fears of dental treatment. These authors used actual visits to the dentist for treatment as their measure of success. Melamed and her colleagues showed that films can be used to overcome similar fears in children (Melamed et al. 1975*a*; Melamed et al. 1975*b*). Video desensitization has also been successfully applied to the treatment of sexual dysfunction among women (Wincze and Caird 1976).

Only a very few of the many studies that have used modeling films to systematically diminish anxiety in therapeutic contexts have been reviewed here. Major reviews of this literature have been carried out by Rosenthal and Bandura (1978) and Thelen et al. (1979). Both reviews conclude that such films have vast therapeutic potential.

Summary and Conclusions

Over three dozen separate experimental investigations, from both laboratory and naturalistic settings, were reviewed, demonstrating that television and film programs can modify viewers' social behavior in a prosocial direction. Generosity, helping, cooperation, friendliness, adhering to rules, delaying gratification, and a lack of fear can all be increased by television material. The studies indicate that television does have the power to affect the social behavior of viewers in a positive, prosocial direction. This suggests that television is an effective agent of socialization, that television entertainment is modifying the viewers' perception of the world and how to live in it.

From the present vantage point, therefore, it would appear that television does act as a socializer. The evidence suggests that it influences the social behavior of viewers in the direction the content of the programs dictates. If, on the one hand, prosocial helping and kindness make up the content of television programing, then this is what will be learned by viewers as appropriate, normative behavior. If, on the other hand, antisocial behaviors and uncontrolled aggression are shown, then these are what viewers will learn to be the norm. This view fits with the fact that billions of dollars are spent annually by advertisers on North American television. Advertisers believe, correctly, that brief 30-second exposures of their product, repeated over and over, significantly modify the public's behavior in regard to those products. The message is clear: People learn from watching television, and what they learn depends on what they watch.

Television is much more than mere entertainment; it is also a major source of observational learning experiences, a setter of norms. It determines what people judge to be appropriate behavior in a variety of situations. Indeed it might be that television has become one of the most important agencies of socialization that our society possesses.

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TELEVISION AND SOCIAL RELATIONS

Introductory Comments

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The uses and effects of television are closely intertwined with people's interpersonal relationships. These include both ongoing, institutionalized relationships, such as those among family members, and rare or occasional contacts, such as those involving strangers or members of different ethnic groups. Researchers have recognized the social nature of television's audience. Several major early studies examined interpersonal topics: family negotiations over viewing, the tendency toward heavier television consumption among adolescents with unsatisfactory interpersonal lives, and the learning from televised models of prototypic forms of social interaction (e.g., Maccoby 1954; Bailyn 1959; Himmelweit et al. 1958; Schramm et al. 1961). Research, contributed to the 1972 report to the Surgeon General, advanced this tradition and supported a recommendation that television's effects should be studied "in the context of . . . the home environment" with attention to "adapting to life's demands" among other references to social relations.

In the two reviews that follow here, it is clear that no great flowering of research in this potentially rich area has occurred in the ensuing decade. Glennon and Butsch review their own and related research on the rather singular topic of the portrayal of the family on television, in terms of social class. McLeod et al. accept a wider responsibility but are unable to find more than a handful of recent studies under any of several loosely related topics: interpersonal influences on viewing, effects of television on interpersonal functioning, or interpersonal mediation that might modify television's influences on young people.

This relative lack of concerted research development, in contrast to other topics reviewed elsewhere in this volume, can be traced to several constraining factors. McLeod et al. note a number of theoretical and methodological biases that limit research conceptualizations and results. On the theoretical side, simple two-variable stimulus-response models of television's effects on individual behaviors predominate. This image is all too compatible with the relative ease and economy of cross-sectional surveys based on individual self-report data, as compared with more laborious designs such as observational and longitudinal studies of families or other primary groups.

Another factor in the neglect of social relations in regard to television may have been the absence of obvious policy implications. In general, those designing policies related to television focus either on the structure and control of broadcasting at one end of the process or on the behavior and development of *individuals* at the other end. The management of interpersonal relationships, even those within the family, is implicitly assumed to lie outside the scope of industry or educational policy or planning. A partial exception can be found in Katz's (1977) report to the BBC. He observes that "to understand the influence of broadcasting, one must know quite a lot about families and peer groups," and he goes on to suggest questions and research topics involving interpersonal relationships and television. But these issues do not enter into even his recommendations for policy or programing research in any direct way.

Recent Research

It would be an understatement to suggest that all research on this topic is encompassed in this section and that none of it is relevant to policy. McLeod et al. note several policy implications of the work they review, and, as they also note, there is a good deal of related work described in other reviews throughout this volume. To aid the reader in locating this additional material, the following categories are reviewed briefly here:

1. Personal interactions over television viewing
2. Television use as a substitute for interpersonal contact
3. Television's social stereotypes, and portrayals of interpersonal relations
4. Effects of televised social images and models
5. Interpersonal modification of television's effects

The Interacting Audience

As Cantor notes in her review of the television industry, the "voting public" that decides the long-term fate of a television series consists of "those *families* who are among the 1,150 who make up the Nielsen sample" (emphasis added). It is largely families (rather than individuals) that watch television, and decisions arrived at among family members determine which program is chosen for viewing at any particular time. This is neither a random process nor an especially consensual one. Different people have different tastes, and as a group they may often agree to watch a program that would have been no one individual's personal choice. One study found, for example, that adolescents were about twice as likely to watch high-violence programs when viewing with their parents as they were when only young people were watching (Chaffee and Tims 1976). The review by McLeod et al. covers a number of interpersonal influences on viewing, ranging from family negotiation during co-viewing to parental rules for children's use of television and to indirect effects of family conflict or communication patterns. The use of television as a tool for controlling other interpersonal relationships in the home is a particularly intriguing topic (Lull 1981).

A Social Substitute

There is some evidence to support the proposition that television, which brings at least the sounds and images of people into one's home, can serve in lieu of interpersonal contact for those whose lives are deficient in this respect. Davis and Kubey note that older people who have little social life watch more television and that the elderly gain many fictional companions from television programs. In studies of creative imagination, Singer finds that most children have "some form of make-believe friend," which is often a television character; children with imaginary playmates are more likely to get along happily in nursery school and to be cooperative with friends and adults. Vicarious interaction, especially for those who otherwise lack sufficient or satisfactory interpersonal contact in their daily lives, may prove to be an important social contribution of television.

Stereotyped Social Portrayals

Television's depictions of interpersonal relations and distorted images of social groups have been popular subjects of scholarly analysis. The review by Davis and Kubey details a number of misconceptions about older people that seem to be propagated on television. The reviews by Greenberg and by Glennon and Butsch provide considerable summary information on the ways in which families are portrayed. Greenberg gives particular attention to the black family, which seems to be more beset with problems than other families on television. The review by Roberts examines sexual relationships, which on television turn out to be largely extramarital, often involving prostitution or rape; displays of tenderness or affection are rare, either in connection with, or separate from, sexual relations. Televised violence, that most-studied of topics, and its reverse counterpart, prosocial behavior (see review by Rushton), are of course interpersonal patterns of action; special attention has been given recently to such social roles as cooperation and leadership.

Pejorative content analyses are often presented in a reformist context; it is tempting to suspect that all aspects of social life in the United States might be infected with the "videomalaise" that Robinson (1976) sees in the political sphere. But content analyses have mostly demonstrated gross disproportionalities in television's portrayals of the day-to-day world. They have not addressed the issue of what standard the social composition of television's world should be judged against. Certainly it would be foolish to expect television to reproduce society, as if characters and events could or should be randomly sampled from some determinable real-world universe. In the absence of clear normative or empirical standards, the case for criticism of television's social stereotypes comes to rest upon the question of effects, presumed or demonstrated.

Effects on Social Relations

It is axiomatic that one can more readily ascertain what is shown on television than its impact on the audience, especially social relations. Interpersonal interactions are difficult to observe, even for the people involved in them; research is necessarily fragmented and on the whole unsatisfying, more reliant on beliefs and shaky lines of reasoning than one would wish. For example, the established correlation between heavy television use and unsatisfactory interpersonal relationships of all kinds (see the McLeod et al. review) is causally ambiguous; it could as conceivably represent a learning effect of television content as the more common interpretation that those unhappy in their personal lives retreat into television viewing.

At a behavioral level, Atkin finds that parents and children often discuss—and argue over—consumer purchase decisions that are stimulated by television advertising. According to Roberts, parents believe that television is the number two source of their children's learning about sex; the parents rate themselves as the primary source, although they do not discuss sex much with their children. This points up a possible generalization about television in comparison with other sources of learning about social relations: Television is more likely to fill a vacuum when other, real-life sources are comparatively lacking than it is to be a strong influence in the face of countervailing information. Conversely, television's apparent impact can be enhanced when its message is consistent with daily experience, as in the fostering of fear of crime in a city area with a high crime rate (Doob and Macdonald 1979; see review by Hawkins and Pingree).

Social interaction is often colored by the expectations and social skills individuals bring to interpersonal situations, and some of these elements have been traced to television's effects. Hawkins and Pingree, for example, conclude that television tends to breed interpersonal mistrust. Both Huesmann and Zillmann in their reviews provide evidence that television fosters acceptance of aggression in others and a degree of habituation to sex and violence in social interaction. On a more positive note, Dorr reports that television helps young people to recognize other people's emotions. These scattered findings suggest that a concerted research effort could uncover a rich variety of social perceptions and skills on which television has significant influence.

Not all that is shown on television is literally learned, of course. Hawkins and Pingree note, for instance, that young children are limited in their capacity to construct integrated interpretations of social reality from disjointed pieces presented on television. Other theorists stress that children view the world from an egocentric perspective (Reeves 1979), so they may not perceive the *inter*personal aspects that adults see in interaction scripts presented repetitively in television comedies and dramas.

Interpersonal Modification of Effects

There is considerable evidence that presumed or feared effects of television can be and are modified by interpersonal influences, as is clearly the case with parental mediation, although McLeod et al. note that this topic has been neglected in research. Other reviews in this volume provide examples that underscore its potential importance. Hawkins and Pingree find reduced effects of television for youngsters in cohesive peer groups and in families that are low in conflict and parental control. Corder-Bolz notes that parents and teachers can enhance learning from television in the area of problem solving, and Singer finds that discussion strengthens prosocial effects of television. On the other hand, learning of aggression can also be strengthened by interpersonal discussion, as Rubinstein and Sprafkin found for verbal aggression effects (see also Comstock's discussion). The basic point is that any social learning process based on televised models is subject to *either* strengthening or weakening in the interpersonal context. No general directional principle can be derived, and the research to date has not been sufficiently grounded in theory to produce clear predictions based on a systematic accounting of the factors involved.

Summary

The relationship of television to interpersonal processes surfaces occasionally as a research theme but has yet to become the focus of any programmatic research effort. It has largely been subordinated to other perspectives, as is suggested by the many different papers throughout this volume that report one or two relevant findings. The empirical literature is fairly strong in content analyses regarding certain major classes of social groups and behaviors but is generally thin and scattered insofar as the study of people's corresponding beliefs and interpersonal behaviors is concerned.

If the past 10 years did not bring the explosion of studies that seemed imminent at the writing of the report to the Surgeon General, perhaps the next 10 will. The reviews in this volume, especially the thorough review by McLeod et al. and the exploration of micro-social "reality" by Hawkins and Pingree, can form a solid basis for more systematic and integrated research efforts in the future.

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The Family as Portrayed on Television 1946–1978

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The portrayal of family life has been a major programing theme from the beginning of television. Many of the 218 fictional families that have appeared in "family series" since 1946 are known and loved by millions of Americans. The Hansens (*I Remember Mama*); the Rileys (*The Life of Riley*); the Nelsons (*The Adventures of Ozzie and Harriet*); the Andersons (*Father Knows Best*); the Cleavers (*Leave It to Beaver*); the Ricardos and Mertzes (*I Love Lucy*); the Kramdens and the Nortons (*The Honeymooners*); the Bunkers and the Stivics (*All in the Family*); *The Waltons; The Jeffersons;* and the Bradfords (*Eight Is Enough*), to name a few, have become a part of our collective history and culture.

The fact that these fictional families are on television, rather than some other medium, is significant in trying to assess their impact on society. Some sociologists consider television the "new public sphere" that has unified the population in a common set of images and symbols. Some go even further and consider television the "new State religion" that cultivates a homogeneous outlook on social reality (Gerbner 1977). In any case, there is consensus that television has a great influence in our collective life.

If television is as powerful an influence as it is held to be, then we might assume the fantasy families who enter our collective awareness on a regular, recurring basis act upon "real-life" families. They can do so by shaping our ideas and attitudes about what kind of family life is desirable, interesting, serious, or funny; they can show us how husbands and wives are supposed to behave and how parents and children are expected to relate; and they can present to us which kinds of family members should be taken seriously and which are only to be seen as fools. Thus, the television family, far from being simply a curious entertainment device, is connected to the ways in which family life operates in "the real world."

It is surprising in light of all this that very little research has focused on how television portrays the family. Booth (1980), Cantor (1975), Fischer (1978), Foster (1964), Maykovich (1975), Skolnick (1979), and Stein (1974) have each addressed certain specific aspects of televised family life in selected periods of time. Baehr (1980), Busby (1975), Dominick (1979), Janus (1977), Nance (1978), Northcott et al. (1975), Seggar (1977), Tuchman et al. (1978), Turow (1974), and the U.S. Commission on Civil Rights (1977, 1979) have focused on some recent portrayals of women on television. There have been few attempts, however, to study the total picture of how family life is presented on television, much less the impact these standardized portrayals have in shaping actual family behavior, and whether this impact is uniform across all class, racial, or ethnic lines.

Ultimately, in order to test the assumptions about the connections of television and real-life families, one would want to focus on the impact on the audience of these fictional accounts. Elsewhere (Butsch and Glennon 1979; Glennon and Butsch 1977) we have criticized the predominant cause-effect model and the laboratory setting used for audience research that have become staples of communications research. Instead, we have advocated indepth, open-ended interviewing of viewers in their homes, before, during, and after given broadcasts, and followup interviews over time. Fortunately, in more recent work (Corder-Bolz and Marshall 1980; Johnson 1979; Michaels 1980), research designs have come into use that qualitatively study audiences over time.

Before this type of longitudinal, qualitative research design can be fully and successfully applied, it must first be applied to television content. We must first have a more clear and complete picture of how television has portrayed the family over time. Especially, we are interested in the way social class position affects the presentation of appropriate male, female, marital, and parental roles in the different families. Very little that deals with these concerns of method and content has been done thus far.

A different picture from the one painted in popular cliches emerges if one looks at the 218 families that have been portrayed over the 32-year history of television. For this reason, it is necessary to have qualitative, historical data before one can make any generalizations about "the" television family, much less about what "it" is doing to viewers. Otherwise, one gets very distorted impressions about these electronic kinfolk. Chester Riley (*Life with Riley*) and Jim Anderson (*Father Knows Best*), for example, are both fathers but at opposite ends of the competency spectrum. Whereas "Riley" is an out-and-out buffoon, "Mr. Anderson" is superdad incarnate.

The present report[1] is based on data from a larger study begun in 1975 on the Portrayal of Social Class Lifestyles in Television Family Series from 1946–1978. It is comprised of 218 family series broadcast on prime time, network television. Other studies (DeFleur 1964; Gentile and Miller 1961; Head 1954; Seggar and Wheeler 1973; Smyth 1954), and the Cultural Indicators Project of the Annenberg School of Communications (Tedesco [Signorielli] 1974; U.S. Commission on Civil Rights 1977, 1979) give some indication of the distribution of social classes in television drama by reporting on occupational frequencies over various periods of time. These studies have documented an overrepresentation of middle-class occupations and an underrepresentation of working-class occupations compared with their numbers in the population which has remained constant for over 30 years of television broadcasting. But the findings were of limited value for our interest in studying *how* television portrays different social class lifestyles and characters. We therefore proceeded to collect historical and qualitative data on the genre we termed "family series" to overcome some of the limitations of these previous studies.[2]

Family series are defined as prime time, network shows in which the main characters in each episode are members of a family and in which the major proportion of interaction is among family members, usually in a home setting. This definition includes several different types of show format. The overwhelming proportion (86 percent) are half-hour situation comedies, but "family series" also includes family dramas (6 percent), family drama-comedies (1.8 percent), serials (1.4 percent), adventure series (3.2 percent), and cartoons (0.9 percent). The definition excludes shows which feature only a work setting, shows which focus on singles, shows set in time prior to the 20th Century, and shows which equally feature two unrelated families.[3]

For purposes of the larger study on social class portrayals, "family series" serve well to give complete pictures of family lifestyle on television because such series encompass concerns with: job; parent-child relations and childrearing practices; the exercise of discipline and the expression of affection; aspirations; measures of and coping with success and failure; sex-role division of labor; problem-solving behavior; kinship relationships; finances; consumer behavior; leisure-time use; manners and tastes; etc. In other words, family series have a focus that allows an inspection of whole clusters of items that comprise social class lifestyles as these are created and presented to the viewing public.

In selecting the genre of "family series" as the best way to get at how television portrays social class lifestyle differences, we ended up with a good deal of historical, qualitative data on how television portrays families. These data on television's fictional families supply us with the kind of information that is needed to get a complete and correct picture of the contents of family life portrayals, so that research on how these contents affect viewers can begin.

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[1] This research is a part of the Portrayal of Social Class Lifestyles in Television Family Series Project. Richard Butsch and Lynda M. Glennon, Co-Principal Investigators, conducted under grants from Rider College Research Fellowship Program and Rutgers Research Council Fellowship Programs. The authors wish to acknowledge the assistance and advice of Muriel Cantor, George Gerbner, Cathy Greenblatt, Arthur Jones, Carol Lauer, Pedro Pequeno, Marilyn Stewart, Terri Stuart, and John Weiss.

Illustrative material and commentaries that were not included here will appear in forthcoming publications.

[2] Taken together, these studies have several limitations, the most significant of which are the following: They mix genre so that the frequency counts of occupations may reflect the impact of occupationally predefined shows, such as police and medical shows, in the overall picture; they do not separate main characters from those with silent walk-on parts; or they include uninterpreted census categories that mix social class categories (highly priced private detectives are mixed together with cops-on-the-beat as protective service workers).

[3] The work setting and focus-on-singles formats were excluded because these, by definition, would not yield family lifestyle materials. The 20th century and single-family foci permitted us to better compare shows in similar social contexts in the case of the former and to keep the series family as the unit of analysis in the latter.

Definitions of Social Class in Family Series

All 218 family series were categorized in terms of social class, which was coded using the occupation of the television family's head of household. The major distinction in occupations for identifying social class was that between manual and mental labor—the former distinguishing working class location, the latter middle class location.

The list of the 218 family series and the occupational placement of each head of household were derived from direct observation of first-run, repeats, and syndicated re-runs of these series, where possible; explicit mention in compilations and directories of television history (Brooks and Marsh 1979; Terrace 1976), *TV Guide* Fall Preview Issues, and information in the Library of Congress, the Lincoln Center Theatre Arts Collection, and the Museum of Broadcasting. The occupations were then coded into major occupational categories used by the Bureau of the Census, which in turn were assigned social class labels, following Braverman (1974).

Professionals, managers, and sales workers (excluding retail sales clerks) were classified as middle class. Retail sales, clerical service, and blue collar workers (the latter specified as craftsworkers, laborers, and operatives) were classified as the nonagricultural working class. The service occupations of detective and sheriff were classified as middle class; private household workers, uniformed police, and other service workers as working class.

A further distinction was made within the middle class—where possible—between the old middle class of small business owners and the new middle class of professionals and managers. We coded each household for self-employed versus employed, based on descriptions in Brooks-Marsh, Terrace, and *TV Guide* Fall Previews. In addition, we distinguished self-employed managers from salaried, and owner-operators who were not managers. Self-employed farmers were coded separately. Besides occupation and social class we coded series information (show type, number of seasons, source, network, etc.), family type (members of household, occupation of members of household, single parenthood, presence of orphans, extended kinfolk, etc.), employment status (employed, self-employed, employer, unemployed, etc.), housetype, regional setting, race, ethnicity, etc.

Our data indicate an even greater overrepresentation of the middle class and underrepresentation of the working class than the composite data of previous studies. Almost half of all family series have had professional heads of house:[4] 43 percent of all heads and 48 percent of male heads of house. Almost one in four are managers or proprietors: 23 percent of all heads and 28 percent of male heads of house. These two occupational groups constitute two-thirds of all heads of household and three-fourths of male heads; yet they represented less than one-fourth of the actual U.S. labor force in 1970 and less than one-sixth in 1950.[5] The middle-class occupations of professionals, managers, sales, and detectives and sheriffs constitute 72 percent of the television heads of household, compared to less than 27 percent of the actual U.S. labor force in 1970.

By contrast blue-collar workers appear as heads of household in only 4 percent of the series, yet have constituted 41 percent (1950) to 36 percent (1970) of the actual labor force. The working-class occupations of blue-collar, retail sales clerk, clerical, uniformed policeman, and other service workers, represent 19 percent of the series but two-thirds of the actual labor force.

The overrepresentation of middle class and near absence of the working class is one aspect of the bias toward the portrayal of higher prestige, glamorous, and successful characters on television. Even within the occupational groupings, we find a consistent overrepresentation of the higher prestige occupations in disproportion to their frequency in the labor force. The most frequently appearing professional occupations in the family series are lawyers and judges, journalists and writers, and entertainers. Salaried managers include a U.S. Senator, a U.S. Congressman, and a governor; three advertising agency executives; an investment firm executive; a corporate division head; and a general.

The frequency of servants is an indicator of a family's economic success. Forty-nine series depicted a family with at least one servant, usually a maid. Single-parent series (46 percent) are especially prone to have servants. Even though this may seem a necessity, for most American families it is a luxury they could not afford.

Economic status is seldom an issue in television family life. For example, the economic strain of working-class families—of simply making ends meet, not saving for the future—is seldom mentioned, and in only one series is the typical working-class solution of multiple incomes featured. Few working wives are depicted (9.6 percent), and several are depicted as quitting work when they marry.

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[4] We coded data for occupations of all household members; but since the distributions of occupations for heads of household and for the identifiable occupations of all other principal characters are very similar, we will discuss only the figures for heads of household.

[5] Labor force statistics have been extracted from U.S. Department of Commerce, Bureau of the Census, *Detailed characteristics of the population, 1960,* and *1970,* Washington, D.C.: U.S. Government Printing Office, 1963, 1973.

The percent of households in the United States with a wife employed has risen from 28 percent in 1955 to 52 percent in 1977 (*Handbook of Labor Statistics* 1978).

The data which we have presented so far are cumulative totals for the entire 32-year history of network television. To look for trends that might provide clues to factors which influence programing, we compiled an occupational profile for each season. In general, the data do not contradict the cumulative data, but they do point up the persistence of these trends in presenting the family life of different social classes.

At the same time, these data reveal some interesting trends. The most striking trend is a precipitous drop in the number and percentage of professional series beginning in 1971. This decline continued through the 1970s. It was accompanied by a simultaneous increase in the numbers and percentage of working-class families (fully half of all working-class television families have appeared since 1970) and self-employed series. The numbers of self-employed series were unprecedented, exceeding the number of professional series. By 1975, the series with self-employed heads of household peaked out and are again declining, while the decline in professional series has leveled out.

Families on Television: Heroes and Buffoons

Using this demographic profile of the 218 family series as background, we observed and audiotaped approximately 1,500 episodes of 50 of these series as the basis for an indepth, qualitative content analysis, in order to try to retrieve some of the themes that emerge in these family portrayals.

As a result of this examination, we discovered recurring themes in television family life. Two dominant themes emerged in working-class family life: a typification of the working-class father and husband as inept, dumb, or bumbling, a characterization which seldom appeared in middle-class family portrayals; and upward mobility not only economically into middle-class occupations but also in terms of acquiring, or identifying with, middle-class lifestyle. The inept husband theme predominates in the 1950s' working-class series, while the upward mobility theme has prevailed in the 1970s. Both themes—taken together with the underrepresentation of working-class family life—serve to weaken the dignity and legitimacy of working-class family lifestyle by both emphasis and omission. The first theme is built upon slapstick humor which laughs *at* rather than with the working-class characters. The second theme usually appears where the working-class family is given some dignity. It presents working-classness as a one-generation phenomenon and as a condition to escape from rather than as a way of being-in-the-world which has desirable features that a working-class family might not want to relinquish as the price of economic mobility.

I Remember Mama and Early Era Family Series

As illustration, *I Remember Mama* (1949–1957) incorporates the two themes: a bungling inept father cast opposite a strong, wise mother, and aspirations of upward mobility. The show features an immigrant Norwegian family in 1915 San Francisco. Lars Hansen, a sweet, harmless, quiet man, is a wage-earning carpenter. There are three children: son Nels, the oldest, Katrin in high school, and Dagmar in grade school. But the most important is Mama, referred to with reverence and warmth by the narrator, Katrin.

I Remember Mama is one of the few series in which a working-class family is taken seriously and treated with dignity. But although the Hansens are *in* the working class, they are not *of* the working class in terms of their aspirations and values. They encourage the children to aim at professional occupations, and they identify with such nonworking class values as individualism, active mastery, achievement, and competitiveness. Dignity is linked with these aspirations. For Mama is clearly the figure of dignity—in the most positive and unpompous sense. She is the inspiration for the rest of the family in their strivings for social as well as economic mobility. We find in *Mama,* as in most working-class series, that the writers associate dignity with upward mobility strivings rather than depict a pride based in one's class lifestyle.

The legitimacy that the dignified treatment appears to give working classness in the Hansen family is undercut by the portrayal of the father as slightly ridiculous and dependent upon Mama. It is Mama who must rescue Papa from his ineffectuality. The depiction of the woman as a strong figure acts not as a positive and liberating characterization of women in general. If this were true, strong women would be found in middle-class series, but they are not. Rather, it heightens the negative characterization of the working-class male.

The working-class shows of the era 1949–1966 portray the husband-father as a bumbling fool with little dignity. Working-class males are the butt of much of the humor. This is true of *I Remember Mama* as well as *The Life of Riley, The Honeymooners,* and *The Flintstones,* for instance. The standard story line for *Riley* was the "revoltin' development" he was always getting himself into, mostly due to his own stupidity or ineptness. In *The Honeymooners,* Ralph Kramden's crazy schemes to get rich quick usually ended in disaster, with Alice reprimanding, "I told you so, Ralph," while Fred of *The Flintstones* is typically rescued by his motherly wife, Wilma. *Hey Mulligan* (*The Mickey Rooney Show*) focused on the antics of the adult son of a hard-working cop—a studio page who hopes to become an actor, and who is clearly in step with the buffoonery of the working-class shows of the era. Outlandish get-rich-and-famous schemes which Mulligan concocts and which invariably fail frequently appear in series episodes.

The ineptness of the husband, accentuated by the contrast to the wife, depicted in most of these working-class families, is particularly important to the derogation of working-class family lifestyles because, traditionally, in a male-dominated society, it is the father as head-of-household employed in a manual occupation which most clearly identifies the family as working class. Yet it is the father who is typified in these shows, so that his ineptness appears to be the reason for the family's economic condition and prevents him from being a positive role model. Thus, working classness becomes equated with a condition caused by limited individual ability. This individualist concept of class is further accented by the contrast between the working-class fathers of limited horizons and the upwardly mobile children who, through their own ability, can escape from the working class.

In an era when male dominance was taken for granted, television consistently reversed this order in working-class families. The impact of this negative portrayal of the working-class father, and thereby working-class family, is heightened by the fact that during the same period few middle-class shows depict the man as a fool and a woman as his superior. When this comedic formula is used in the middle-class series, the husband is intelligent, strong, and mature, and the wife is the fool. For example, the mother-child relationship of *The Flintstones* becomes a father-child one in *I Love Lucy*. Lucy is the child, and Ricky is the adult who finds her amusing and toys with her. He is always able to outmaneuver and control her, to take care of her and extricate her from her schemes when they get out of hand. The dumb wife, not the dumb husband, appears in *Burns and Allen, I Married Joan, Wendy and Me, Debbie Reynolds,* and *Green Acres,* among other middle-class family series.

The contrast between working-class and middle-class characterology is even more striking when we focus on the more successful long-run series, telecast 5 years or more during the fifties and sixties. Four of the early working-class series were very successful. In *Riley, The Honeymooners,* and *The Flintstones,* the entire storyline is built around laughing *at* the husband. Even in *Mama,* Lars is a source of humor, albeit somewhat less buffoonerized than the others. Comparing this to the successful middle-class shows of the same period, 13 middle-class series telecast five seasons for more, only one *The Stu Erwin Show* (*Trouble with Father*) ridicules the father-husband. This buffoon image of the working-class man was set opposite the *Father Knows Best* super-dad commonplace among middle-class series into the seventies.

The dominant form taken by middle-class shows in the fifties and sixties is one based on the idea of parents as superpeople always able to deal successfully with any problems that arise, always rational and wise. Here the husband and wife are not pitted against each other to create a negative contrast. Rather, they are in harmonious agreement—although the wife's traditionally supportive and deferent role would be criticized today as a negative image for women. This form is epitomized by *Father Knows Best* but appears consistently as the pattern of parent-child relationships in middle-class family series. The working-class series in which such superpeople appear feature families that are upwardly mobile. Superparents appear in 12 of the 13 successful middle-class series from 1949 to 1971. In other words, the typical working-class series depicts the father as buffoon and draws a negative contrast between husband and wife, damaging to the image of both as parents, while the typical middle-class series depicts the parents as superpeople.

The same themes of ineptness and upward mobility can be seen in the newer working-class family series, although the characters are no longer such one-dimensional fools. The newer working class characters have more complexity and depth. Two of these shows will be highlighted to illustrate the continuing presence of these themes. Both a black family and white family were selected to suggest that it is class rather than race that is the more salient variable in understanding family life portrayed on television.

All in the Family

All in the Family has been one of the most popular shows on television. The Bunkers are a working-class family living in Queens, New York City. Archie and Edith are in their early fifties. Archie, a worker on a loading platform, moonlights occasionally as a cab driver. Edith stays at home doing housework but has helped out by taking temporary jobs. She also does volunteer work in an old-age home. They have a married daughter, Gloria. In the first years of the series, Gloria and her husband, Mike Stivic, lived with the Bunkers while Mike finished college. Gloria worked in low-paying jobs to support him. In the later seasons, Mike and Gloria bought the house next door and had a baby. Mike then landed a job as a college instructor.

Archie is a loud-mouthed bungler and usually made the brunt of humor. His word-mangling and malapropism are set up in such a way that the audience laughs *at* rather than with Archie. Edith is not domineering over Archie, nor does she look down on him for his failures. Rather, she loves and respects him for his humanness. So largely because of Edith, Archie retains some dignity; even though the audience is laughing at him, Edith never is. More importantly, she seems to be happy in the working-class world, harboring no dissatisfactions and resentments against Archie because he is a blue-collar worker and not very well paid.

In spite of Edith's contentment with working-class life, the theme of upward mobility appears on this show. Archie quits his job and buys a bar, thereby becoming socially mobile. The theme is also carried by Mike's and Gloria's running confrontation with Archie's character and lifestyle. This is presented as humorous, but at Archie's—and the working-class family's—expense. It presupposes an elitist concept of culture and revolves around the parents' discomfort with the upper middle-class life.

The assumption seems to be that it is laughable when someone does not want to do things the way "the better class of people" do and that, given sufficient income, all families would live the way upper middle-class ones do.

Good Times

Good Times, begun in 1975, illustrates these themes within a black family. Florida Evans, the mother, was a maid who quit her job to raise the children when James, her husband, began earning enough to make it possible. There are three children. J.J., the oldest, and Thelma, next in line, sass one another continually for maximum comedic effect. Michael, the youngest, is a bright, serious, and politically concerned youngster. Before his "death" in the 1976–77 season, James was a worker on a loading dock, repeatedly laid off and rehired.

The theme of upward social mobility is dominant. Each of the children is portrayed as highly mobile. Even Florida's second marriage reflects the "creeping mobility" found in many working-class family shows; her husband-to-be is the owner of an appliance repair shop.

The writers may be motivated to present black family life in a positive light to counter racist stereotypes and create role models for children, but they end up reinforcing the negative bias that has characterized working-class shows. By casting this family as upwardly mobile—spectacularly so—instead of as one in which the children are headed for more typically working-class occupations (e.g., factory worker, supermarket clerk, or postal worker), the writers have created a positive image of the Evanses that has more to do with their getting out of, rather than being in, the working class.

Further, each of the children is headed for the upper middle class with few self-doubts, little self-consciousness, and an overabiding sense of the inevitability of it all. It is as though the Evans family is a displaced middle-class one which takes all the adversity and limitation in its background and "comes up fighting." In showing the children's mobility as personally unproblematical, the writers contribute to the false hopes that plague working-class youngsters who have no thematized image to counter the ideology of individual achievement.

Conclusion

A contrast between the working class and the middle class has typified television portrayals of families for most of television's history. This was especially true in the fifties era. The three long-running shows, *Riley*, *The Honeymooners*, and *The Flintstones*, presented the audience from 1949 to 1966 with an image of the working-class man as a buffoon. The buffoon image of the working-class man is not so blatant in the seventies' working-class shows. This change has been accompanied by a new type of middle-class family: For the first time, upper middle-class professionals were debunked and their quirks made the central comic theme. From 1974 to 1976, this undignified image was dominant in middle-class series, coinciding with a precipitous drop in middle-class family series. In the 1976–77 season, however, there was a reappearance of middle-class superparents, tailored to the seventies and made more psychologically complex.

Finally, there has been a marked increase in the number of working-class series, including several that do not properly fit into our category of family series but which are nevertheless part of the trend. This may not mean, however, that working-class family lifestyle is now being legitimized. Where the earlier shows were typified by the bumbling husband, the recent series are typified by strikingly upwardly mobile children.

The two themes we found throughout working-class family series undermine the likelihood of creating an image of the working class as a viable alternative culture in modern society. It is easy to see the implications of the theme of the bumbling, loudmouthed male. The impact of the theme of upward mobility is more subtle but no less potentially damaging. It would seem that such shows as *The Waltons*, *Mama*, or *Good Times* offer pictures of working-class family life that can serve as positive models for working-class children, giving them mirror reflections of families, like theirs in some respects, that instill pride and self-respect. But this is problematical because each of these shows entails a one-generation working classness: All of the children are headed for upper middle-class occupations. Actually the positive image derives not so much from the working-class identity per se but from the fact that the principals are leaving it behind. The emphasis on upward mobility of the children suggests that the good life is one in which children move far ahead of their parents in the occupational hierarchy. Further, the theme of dramatic social mobility woven into these more "serious" working-class family dramas implies that, if there is something good about moving up, there must be something wrong with not doing so.

Whenever the theme of upward mobility is observed in the working-class shows, there is no indication that movement upward presents any problems for individuals who are "rising." Everyone applauds their success, but nowhere in these shows is it acknowledged that social mobility involves a shift in consciousness, that one's lifestyle, identity, and worldview get shaken up in the bargain. Nor is it recognized that, in such a situation, one becomes "marginal" to both subcultures and that the resulting sociological ambivalence (Glennon 1978, 1979) is anything but unproblematic for self and for family. Except in *All in the Family,* where Mike and Gloria reject their parents' tastes, there is no attention paid to the "group self-hatred" that is a typical consequence of leaving behind the denigrated subculture of one's origins (Rubin 1976; Sennett and Cobb 1973). And there is no acknowledgment of the other typical consequence of marginality: the inability to feel "at home" in the subculture of the middle class.

But what of the idealized picture of family life in middle-class family series, whether we consider the fifties and sixties version of superparents who always knew what to do in each weekly quasi-morality play or those in the seventies who dealt in the most therapeutically correct fashion with their children's problems? These idealized pictures may raise expectations about parent-child relations that are not realizable and can lead one to question one's own family adequacy.

The conclusions that emerge from our observation of the content of televised family life within a social class context require further testing of the kind mentioned above. This report stands as a starting point in the larger endeavor of studying the connections of electronic and real-life families.

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Television and Social Relations: Family Influences and Consequences for Interpersonal Behavior

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Viewed from the perspective of a decade ago, we would expect great progress in the seventies toward understanding the interpersonal context of television behavior. The Surgeon General's report (Comstock and Rubinstein 1972) contained several chapters (Chaffee; Chaffee et al.; Lyle and Hoffman; McLeod et al.) documenting that family processes and behavior affect the extent and content of the child's television viewing. There also was some evidence that parental comment on the limited utility of aggression helped to reduce the connection between the children's exposure to violent content and their aggressive behavior (McLeod et al. 1972). Subsequently, literature reviews of the decade (e.g., Comstock et al. 1975) have consistently emphasized the social context of television viewing.

The realities of public policy also point to the importance of investigating strategies by which interpersonal processes might be used to enhance or diminish the effects of television. To the extent that the government regulation over broadcasting content threatens First Amendment guarantees, mitigation by various interpersonal socializing agents becomes an attractive policy alternative. At the Airlie House Telecommunications Policy conference of 1975 (Comstock 1975), for example, two of the five panels were devoted to emphasis on guiding audiences outside the governmental regulatory sphere.

Three dominant trends of reviews on television research direct attention to interpersonal considerations. First, these reviews have broadened the focus of concern to effects beyond aggression and antisocial behavior to prosocial behaviors (e.g., cooperation, helping, creative play) that have clear implications for interpersonal behavior. Second, they have stressed the need to understand the social processes occurring between television exposure and its effects. These processes include interpersonal communication between family members, peers, and siblings. Finally, the reviews have responded to the realities of policy by stressing the identification of intervention strategies to limit antisocial effects and to enhance prosocial outcomes. These strategies are likely to involve parents, teachers, and others attempting influence through interpersonal communication.

The promise of the earlier research, coupled with strong support of reviews suggesting priorities for the decade, leads to a strong expectation of rapid progress in the area of interpersonal influences and television behavior. Unfortunately, such is not the case. Our literature search had to use the broadest possible limits of relevance to capture even the limited yield of studies reviewed here. The reasons for this modest yield are not hard to find. Most television-effects research continues to operate from simple two-variable stimulus-response models despite widespread recognition of their inadequacy. Research questions continue to ask, "Is there an effect of television?" rather than "Under what conditions is an effect most likely?" Interpersonal influences mitigating television effects implies studying third variables incompatible with two-variable models and simplistic research questions. Where third variables have been used, as with perceived reality of television, for example, they have tended to become the subject of investigation as dependent variables in their own right rather than being explored more fully as mediating variables (McLeod and Reeves 1980). Most third variables used in mass communication research are seen as antecedent to television exposure and are thereby used to test for spuriousness of effects rather than as mediating variables altering the magnitude of the effects.

Another reason for the dearth of studies of interpersonal mediation is methodological convenience. Individual level constructs measured by self-report from children at a single point in time continue to be the dominant mode of measuring dependent media-effect variables. Neglected are studies using the family or peer group as the unit of analysis as well as investigations into the processes associated with television use. In contrast to the relative ease of testing children in the classroom, studies of family groups pose difficult problems of recruitment. Measurement of processes requires time-consuming and skilled coding not characteristic of individual self-report data gathering. It is not surprising that the more convenient research methods dominate the literature.

What is to be found in the literature of the past decade is a relatively small number of studies that can be organized into three areas of concern for television and social relations:

1. The impact of parents and other sources of social influence on the use of television.
2. The effects of television use on family functioning and on other types of interpersonal behavior.
3. The mediation effects of parental intervention and other forms of interpersonal behavior in enhancing or diminishing the impact of television viewing.

Before turning to each of these areas, we will review some of our other strategies and decisions about this literature review. Although we have restricted ourselves to the traditional nuclear family, we have tried to include whatever is available for peer and sibling relations.

In the second section on television's potential effects on interpersonal behavior, we have confined our review to studies of overt behavior. The research literature of the past decade includes a large number of studies of television-viewing effects on cognitive and perceptual variables, many of which have potential consequences for how the person interacts with others. We have not included these because this would have cast the net too wide. In the third section, we include two citations showing evidence for a connection between television viewing and perceptions of interpersonal mistrust. These have been included because they also show evidence for peer and family process mediation of such effects.

The reviewed studies tend to be isolated without the broad focus of a well-supported research program. Samples are often small and are frequently specialized in using atypical populations. Many are lacking in theoretical focus, inadequate in design, and lacking in controls for alternative explanations. Most studies depend upon single timepoint self-report questionnaire data obtained from children in schools, although the recent years have seen a broadening in the variety and imagination of research methods used. Despite the limitations, we have tried to make sense of the research and to be tolerant of its shortcomings. As a result of the limitations of the available studies, however, we have chosen to spend some time suggesting types of future research along with reviewing existing studies of the past 10 years.

Interpersonal Influence on Television Use

Parents and other socialization agents can influence children's television behavior in two rather different ways. First, they may exert influence on how much the child watches television generally or, more specifically, on what types of programs are watched. To the extent that the child spends less time viewing, the impact of television is potentially reduced. A given effect also might be enhanced by the parent or teacher in encouraging the child to view more frequently. The second path of influence does not involve the amount of viewing but, instead, focuses on the connection between the process and the effect. The latter process is one of mediating the force of the content by intervening simultaneously with or after the exposure. It is the former type of influence, exerted on the amount of viewing, that we are concerned with in this section.

The studies of interpersonal influence on television use can be categorized along two dimensions: the motivation of the socializing agent and the type of behavior being changed. Motivation can be either *intentional* intervention in the form of rules or direct guidance or *unintentional* without specific intent acting through the modeling of behavior or the general reward and punishments systems used without regard to television. The type of behavior can be divided into changes in the amount of time spent and the extent of viewing of different types of content.

Three basic types of research questions are relevant to this area: To what extent are parents and other socializing agents concerned with and aware of their children's television behavior? To what extent do parents try to intervene directly by controlling and/or guiding children's use of television? What other intended sources of influence on television use emanate from the interpersonal context of the family and peer relations?

Parental Concern and Awareness

Virtually all studies agree that parents are concerned with the violent and sexual content of television, although that concern is extended by only some of them to worry about the amount of time their own children spend watching television. One reason given for this lack of worry is that parents may underestimate their child's viewing time and may not be aware of the extent of the violent content in what they watch. In the report to the Surgeon General, Greenberg et al. (1972) found that children gave estimates of their own viewing time that were twice as great as those given by their mothers when estimating how much time their children devoted to viewing. This finding was replicated by Rossiter and Robinson (1975) who also showed the mothers reported more rules, higher levels of co-viewing with their children, and lower estimates of the child's susceptibility to advertising appeals in comparison with the child's own responses to these questions. The assumption is, of course, that it is the mothers who distort reality and the children who give valid responses. This assumption seems to be the most reasonable interpretation, but it remains untested.

There is also some evidence that mothers may not recognize the extent of their child's response to television content. Children tend to perceive more violence in the same set of television programs than their mothers do (Abel and Beninson 1976). Cantor and Reilly (1980) found evidence for mothers' apparent underreporting of their children's fright reaction to scary television programs and movies and also for their seeming overreporting of parental intervention.

Parental Intervention and Guidance

Regardless of the apparent overreporting of parental intervention, it appears that the Comstock and Rubinstein (1972) conclusion that "television watching by youngsters is largely devoid of parental influence" holds even at the end of the decade. Parents still are unlikely to control the quantity or the character of viewing, although there are certain restrictions in some families (McLeod et al. 1978). Apparently these restrictions are likely to decline sharply in the senior high school years. Some 39 percent of sixth graders but only 18 percent of tenth graders reported rules about the time spent watching television. Mothers again were more likely to report rules, with 69 percent of the sixth grade mothers and 31 percent among the mothers of the older children reporting rules about viewing. The magnitude of both these proportions can be put into context by comparing them with the much larger proportions of rules about family arguments and dinner table behavior.

If rules about time spent watching television are not very prevalent, it is likely that parental guidance about specific programs is even less common. Streicher and Bonney (1974) report that 6- to 12-year-old children are likely to say that parents control but do not guide their television watching. Similarly, Mohr (1979) found that both mothers and their children (ages 9 to 14) report very little parental guidance, with 85 percent of both groups saying "none" for guidance about specific programs.

It appears that parental comment about shows may be a bit more common for older children and adolescents. McLeod et al. (1978) found that a majority of mothers and one-third of their children report parents "frequently" say "real life is less simple than shown on television." Other types of comments frequently made included: "There are better ways to solve problems than violence" (49 percent mothers, 26 percent children); "real life is not like that" (32 percent, 17 percent respectively); and "comment on the ways the television character solved a problem" (31 percent, 20 percent). The effects of such comments on children have not been ascertained.

Success of Parental Intervention

When parental intervention is used, through discussion and other forms, it can be influential on the child. Reid and Frazer (1978, 1979) conducted close observation in nine families and found that "parental consumer teaching orientation" aided 5- to 11-year-old children to understand television advertisements, using skills beyond those implied by the cognitive stage associated with their age.

It is also encouraging to find evidence that parents may be induced to exert guidance on their children's television viewing. Heald (1980) mailed television guides to a sample of parents over a 6-week period. A significantly greater proportion of the experimental groups reported receiving their parents' positive and negative recommendations about programs than of a control group who were not mailed guides. Unfortunately, there is no indication of the extent to which parental recommendations influenced the children's viewing of programs.

Modeling Influences

Previous research in the Surgeon General's committee report indicated a low positive correlation between parents and their children regarding the amount of time spent watching television and the viewing of various types of programs (Chaffee et al. 1972; McLeod et al. 1972). Some of this relationship could be explained by the potential spuriousness of factors such as co-viewing of specific shows and a common socioeconomic background. Reverse modeling, the influence of the child on the parents' behavior, is an alternative explanation of this correlation. Ten years later, it appears that modeling is still a weak explanation of the child's television behavior, although Roberts (in press) reports that the amount of the parents' viewing was the best single predictor of the time that his sample of 10- to 12-year-olds spent viewing. Reverse modeling evidence has also been claimed by Surlin (1978) in a study of the effects of an advisory warning system, e.g., that parental direction is advised.

Structural Influences

Although most television research uses the individual as the unit of analysis, the research evidence indicates that program selection and use are by no means independent of other family members and peers. Chaffee and Tims (1976), in a study of 194 junior and senior high school children, found ties between the presence of others and the type of program viewed. Siblings were likely to be present when viewing humorous shows (we seldom laugh alone), and parents are most likely to be present for aggressive and reality (e.g., news) shows. The causal direction is not clear, and we are not sure whether the child adapts program choice to match who is present or, alternatively, whether he or she seeks out appropriate companions for a particular type of show. We also know relatively little about the influences the presence of others may have on program effects.

To the extent that family members watch television on the same set, program selection is not likely to be a matter of individual choice. Lull (1978) studied this problem by using hypothetical program descriptions to analyze how television program decisions were made in 17 families. He found, not surprisingly perhaps, that power in the family predicted whose choice won out in the family discussion. Parents and the older children held the most power.

Influence of Family Communication Patterns

Following the Chaffee and McLeod (1972) lead in the Surgeon General's volumes, researchers have found that the norms operating in the family with respect to interpersonal communication can be used successfully as potential explanations of television use. Abel (1976) found that the child's adoption of parental viewing patterns of programs was restricted to high socio-oriented families who emphasize harmony and agreement in interpersonal relations. McLeod and Brown (1976) extended the parent-child communication pattern research by showing systematic relationships to the gratifications that adolescents sought from television use. They also found that, alone among the dimensions of affections and punishment in the family, restrictive punishment (e.g., grounding) was positively related to the extent of the adolescent's television viewing.

Lull (1980*b*) found that both the socio-oriented (harmony and agreement) and concept-oriented (emphasis on dissent and expression of opinion) dimensions were related to uses of television as a resource for the accomplishment of interpersonal objectives at home. The differences included the structuring of daily activities, talk patterns, interpersonal goals such as communication facilitation, affiliation/avoidance, social learning, and demonstration of competence-dominance. The socio-oriented families watched more television and were more likely to use it to reach interpersonal objectives. Concept-oriented families saw television as not being useful to them as a social resource, although they did use it for transmission of values, for exercising authority, and for gatekeeping.

Fry and McCain (1980), in a survey of 377 household heads with children between 2 and 15 years, found family communication patterns related to rules about television use in the family. Concept-orientation predicted to "content guidance rules," while both dimensions were related to "social control" rules (use of television as reward and punishment). High socio- and low concept-orientation families (protective) were highest on social control rules, while those with the opposite pattern (pluralistic) were the lowest. No differences among family communication types were found for nonrestrictive approaches to television.

Peer and Sibling Influences

Research on the role of peers and siblings continues to be underrepresented in the literature. Aside from the Chaffee and Tims (1976) finding that siblings watch humorous shows together, only one other study relates to peer relations. Johnstone (1974), using the large data base of Coleman's (1961) adolescent study, found that at all levels of high school, boys and girls oriented to parents rather than to peers (as measured by a forced-choice question) were more likely to be heavy television users than those more oriented to peers. The finding is difficult to interpret, of course. Parent orientation could indicate strong ties to the family or weak ties to peer or both. Peer orientation is similarly confounded. The desire for viewing television is also confounded with available time (assuming the peer-oriented are busier outside the home and away from television) making interpretation even more difficult. It is, however, the only study of the decade for peer relations.

Overview of Interpersonal Influences

Research has focused almost exclusively on parental control of the child's viewing time at the expense of developing an understanding of influences on information processing of such content on different uses of television. Most attention has been given to overt attempts to control the child while overlooking the more subtle influence of family processes.

Implicit in the parental-influence research is the assumption that the parent molds the child. This unidirectional parent-molds-child view of the nature of socialization has given way during the past decade to the realization that influence in the parent-child dyad must be conceptualized as reciprocal (Hartup 1978). Although parents and children differ greatly in maturity, they do not differ in their ability to affect one another (Bell 1974).

More specifically, there is a need to understand differences among families and other interpersonal systems and how they affect socialization to television use. Most studies use modal descriptions of presumably typical families. Occasionally, studies control for the social class of a family, assuming that social class captures the most salient differences among types of families. Little attempt is made, however, to examine systematically what social class differences might represent in terms of family functioning. A better technique than simply splitting a sample on social class would be examining differences among families that cut across class. The Chaffee and McLeod family communication-pattern typology is one such approach and the only one used to date in mass media research. It is likely that other typologies that have been shown to be useful in marital and family research could be usefully applied to television research.

While the typology derived by Chaffee and his colleagues discriminates families along a communication dimension, alternative typologies are built on a greater number of dimensions and focus on more than one aspect of family functioning. The typology developed by Moos and his colleagues (Moos 1974), for example, stresses the measurement and description of the interpersonal relationships among family members and the directions of personal growth which are emphasized in the family, as well as the basic organizational structure of the family. The work by Fitzpatrick and her colleagues (Fitzpatrick 1976, 1977; Fitzpatrick and Best 1979) empirically types marital relationships in terms of their level of interdependence, their ideology of relationships, and their communication patterns.

Aside from the unidimensional view of the family reflected by the Chaffee and McLeod typology, there is a conspicuous neglect of peer and sibling influences on the child and the adolescent. In *Children of Six Cultures* (1975), Whiting and Whiting found that, while parent-child relationships made more of a contribution to the child's acquisition of dependent and intimate behaviors, relationships with other children had a greater effect on the socialization of aggression, the development of social behavior in general, and the emergence of prosocial acts. Despite the growing realization of the importance of peer and sibling relationships in affecting a wide array of interpersonal behavior (Yarrow 1975), the tangential findings from Chaffee and Tims and the Johnstone study are the sole representation of these crucial areas in a decade of research.

Television Influences on Family Functioning and Interpersonal Behavior

The fact that family members spend about half their waking hours at home watching television imples that use of the medium should have important consequences for the family, if for no other reason than that it affects the proximity of family members to one another. Effects are made more likely because there are large areas of family functioning that are not governed by societal norms but rather operate from rules fashioned in the processes of family interaction. It is likely that, when societal norms are absent, family members will accept behaviors seen on television as legitimate.

Also, a relatively large proportion of television viewing is done with other family members. Robertson (1979) reports Neilsen data from 1975 showing that 70 percent of prime time watching is co-viewing by an adult and child. The proportion is only 20 percent for Saturday mornings. These figures apparently remained unchanged from 1971 to 1975, a period when many households became multi-set households. The number of television sets does seem to make a difference. Bower (1973) reports that in multi-set households, 43 percent of the viewing was between siblings, and another 33 percent was the husband and wife watching together. Single-set homes, in contrast, had 55 percent viewing with the entire family.

Although a strong presumptive case can be made for the effects on television use on family functioning, only a small percentage of television effect studies use interpersonal behavior as a criterion. As discussed earlier, the neglect of interpersonal effects research can be accounted for by the complexities of conducting group testing, the difficulties of measurement, and the scarcity of theory conceptualized at that level. Theoretical explanations of television effects concentrate on interpersonal constructs, although both antisocial and prosocial outcomes imply interactive behavior with others.

The research that is available in the area of interpersonal effects can be categorized along three dimensions: the source of the television influence, the level of effect, and the direction of effect.

The *source* of television influence can be divided into four categories: the activity of television viewing, the inherent form of television, the manifest content of programs, and the latent content of television messages. One of the frustrating aspects of trying to understand the many nonempirically based assertions about television effects is that the authors often are not specific about the source of influence. The activity of television viewing entails the time allocation of the audience member regardless of the content viewed. Unfortunately, many of the assertions that the activity of viewing causes an effect are based on assumptions about what persons might have been doing (e.g., reading books, talking with others), if they were not watching. Effects of the form of television are those emanating from the medium and its production conventions. Again, this is independent of content. Television, for example, has a compelling visual image akin to the fascination we have with viewing a flickering fire. One may lose attention, but the visual image will induce its return. The manifest content includes the portrayals of family roles on television—the inept father and the "ding-bat" homemaker mother—and the demographic characteristics of those in various occupations, etc. Latent content are those subtle messages that may be independent of plot. They include the relationships between family members, how the television family handles conflict, and so forth. We would expect that messages portraying social behavior untried by the child and undiscussed feelings (e.g. awkwardness, embarrassment) would be especially potent sources of learning.

The *level* of effect is divisible into three categories: individual, relational, and group or total interpersonal system. Most of the research has dealt with the individual level, the person's psychological processes and social skills within the context of the family. The relational level focuses on the three subsystems which make up the family: the marital dyad, the parent-child system, and the sibling-sibling relationships (Goode 1964). The group level treats the family as a total system with both a history and a future. There is little work on the last two levels that is relevant to the media, a situation that appears to need correction.

The *direction* of interpersonal effect is the most straightforward. Some of the studies aim at discovering negative or dysfunctional consequences for individual social behavior or family functioning. Other studies are neutral in looking at the effects of television on speech or behavior patterns without anticipation of consequences. A third group of studies concentrates on positive or functional consequences of television use as, for example, how it helps individuals achieve their interpersonal goals. It is interesting to note that no study has dealt with both functional and dysfunctional outcomes in the same investigation.

The positive and negative approaches also divide the research into theoretical viewpoints and models of the audience. Those focusing on negative outcomes tend to be "effects-centered" (McLeod and Reeves 1980) and take behaviorist approaches that portray the audience as being relatively passive recipients of television. Those finding positive effects tend to be "audience-centered" and use functionalist or symbolic interactionist perspectives to present a much more active problem-solving image of the audience member.

Effects of the Activity of Television Watching

Bronfenbrenner (1973) represents the strongest statement of negative effects of television viewing activity, although he does not provide empirical evidence for this position:

> The major impact of television is not the behavior it produces, but the behavior it prevents. When the television set is on, it freezes everybody; they're all expressionless, focused on the image on the screen, and everything that used to go on between people—the games, the arguments, the emotional scenes, out of which personality and ability develop—is stopped. So when you turn on the television, you turn off the process of making human beings human.

Negative consequences were examined empirically by Dunn et al., (1976) in a study comparing 716 low-income rural children living in areas of Iceland where television had been introduced with a matched sample of 598 9- to 17-year-olds in non-television areas. No significant differences were found with response to adjustment to peers or family, as measured by the Bowerman and Kinch (1959) self-rating scales. Within the television community, however, there was a significant negative relationship after controlling for family size, age, and sex between television time and adjustment to peers. Family adjustment results were in the same direction but not significant. The authors acknowledge the problem of the direction of causality and indeed see the low adjustment leading to higher television use as the more likely path of influence.

The relational effects of television viewing were examined more directly in an observational study by Brody et al. (1980). They brought 27 3- to 5-year-olds and their mothers and fathers into a laboratory set up as a living room. The families were observed during a television-watching phase and a family play non-television time. The child was allowed to select the television program watched among three types of shows. Not surprisingly, the children talked less during television viewing, were less active, and less oriented toward parents. Interestingly, however, there was more touching between the child and both parents. Tacticity may be a previously unrecognized function of television co-viewing.

A positive outcome investigated was the possibility that television could be used to facilitate interaction between parent and child. Williams et al. (1979) studied 15 black or Spanish-surnamed parent-preschool child dyads who were assigned to one of three treatment groups: Parent-child interaction focused on a toy seen on television, interaction on any topic other than television, and a condition where parents were not encouraged to talk with their children. In the first two groups, a program was undertaken to increase interaction by training parents to use a special toy kit. The results indicated that television could be incorporated into the interaction, for the parents but not for their children. The children in the television-discussion condition did use less egocentric speech patterns than others.

Negative and positive outcomes were formulated by Rosenblatt and Cunningham (1976) as two theoretical possibilities: the noise of television operation as an instigator of family tension versus television watching as a coping mechanism to avoid tense interaction and the expression of anger. A sample of 64 persons, 87 percent female, were either interviewed or mailed back questionnaires concerning television use and family tension (measured by 6 items, e.g., "Is anyone you live with too critical or fault finding?" "Are you often moody?"). The key correlation between television time and family tension was .41, unchanged by controlling for socioeconomic status. A nonsignificant contingent relationship was found when the sample was divided by the density of the living situation. The correlation between television time and tension was .48 in high density homes but only .21 in those of low density. This correlational difference was interpreted as supporting the positive function hypothesis that televison is used to avoid tense interaction, but the authors admit the data can be argued the other way around. Replication with other designs and larger samples is needed.

A variety of other positive functions have been suggested. Faber et al. (1979) observed that television as an activity serves to guide the accessibility of the self to others in the family and also allows the adolescent to legitimize daydreaming while seeming to pay attention to the television. Lull (1980*a*) developed a more elaborate categorization of the positive functions of television viewing. He used an ethnographic "social constructivist" approach in a study of more than 200 families of children of varying ages and concluded that the mass media are ". . . valuable social resources, not unlike language and occasions for talk, which are particularly useful to the imaginative social member for the construction and maintenance of desired relations at home." Lull divides the social uses of television into structural (environmental resource as in using it as background noise and regulator in punctuating time and activity) and relational (communication facilitation, affiliation-avoidance, social learning, and competence-dominance). The system provides a potentially useful way of organizing future research in the area.

Effects of the Form of Television

Despite the abundance of literature on the form of television, little has been done that relates the unique configuration of attributes of that medium to its potential effect on the interpersonal behavior of the audience. This deficiency may change in the future. Singer (1980), for example, presents an elaborately reasoned, if largely data-free, "cognitive-affective" analysis on the form of television. A key assumption is that television is constantly bombarding us with sequences of images that hold our attention and maximize our orienting responses. Although the consumption is efficient for developing recognition of images, it is inadequate for efficient retrieval, since it does not allow the time we need to replay, think about, and go through the sequential verbal process of labeling the images seen. A "crowded" medium like television is said to establish conditions where there is less likelihood that much content will be transferred from short-term memory to the long-term memory system. It is possible that television viewing may substitute for the active practice of one's own imagery skills. Unlike reading, television can stimulate specific imagery content but not independent practice, because it allows the person to incorporate an external image without forming one's own image through reflective thinking. Singer also relates the form of television to brain functioning and particularly to the holistic qualities of the right brain.

Singer's work relates to interpersonal behavior through the well-documented assumption that make-believe and imaginative play and replay are important to the development of the cognitive, emotional, and interpersonal skills of the child. Singer cites research showing training in make-believe by adults can increase children's capacity to tolerate delays, to move smoothly in school, to empathize with other children's feelings, and to become more effective in social interaction. While the link Singer makes between television's form and restriction of imaginative thinking is not backed by solid empirical evidence, the large number of hypotheses present an interesting research agenda for diverse areas of content such as children's programing, advertising, news, and documentaries. Beyond the need to document whether typical

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television content in these areas has such limitations on the information processing of audience members, there are additional questions as to whether these limitations are inherent in the form or if the content could ease such limits.

Effects of Manifest and Latent Content

Research activity on manifest-content effects has concentrated heavily on children's advertising. Atkin (1976), using the novel method of observing parent-child interactions in supermarkets, asserts that children's behaviors are indeed shaped by the cereal advertisements they see. He infers this from the firmness of the child's product preferences and from the fact that the children reacted with displeasure when they did not obtain their favorite cereal. Similarly, Reeves and Atkin (1979) found that the amount of Saturday morning television viewing was associated with the frequency of child-initiated purchase requests which, in turn, leads to potential for conflict. Unfortunately, we do not know what implications, if any, the child's displeasure (and presumably the parent's at being pressured) has for the functioning of the dyad or the family.

Negative individual consequences have been studied through projective techniques (Sheikh and Moleski 1977). A total of 144 primary school boys and girls were given sentence-completion stories involving a child of the same sex and age seeing a consumer product advertised. The child was to tell what the main character is thinking and feeling and what happens in the situation. The key assumptions are that the child identifies with the main character and that he/she reveals his/her own internal reactions in giving responses. More than 90 percent said the child felt like asking the parent for the product, but only 57 percent said the child actually asked the parent. Some 66 percent (presumably of the 57 percent who thought the child had asked, although that is not indicated) felt the parents would comply. When asked what happened when the parent said no, 33 percent (the percentage base is not indicated) gave responses classifiable as "unpleasant affect," 23 percent "acceptance," 23 percent "aggression," and 16 percent "persistence." If we are willing to accept the research assumptions and the lack of important details about the methods used, it appears that television advertising can lead to reactions in children that potentially generate family conflict.

Goldberg and Gorn (1978) examined the strength of television commercials for preschoolers by pitting the choice of an advertised product with other socially desirable alternatives. A majority of children in the experimental condition, who had previously viewed a program with commercials for the product, chose to play with the toy rather than with a friend, compared to only 30 percent for a control group seeing the film without commercials. Similar differences were found for playing with a "not-so-nice boy" with the product rather than with a "nice boy" without it. Fewer children in the experimental condition than in the control condition were willing to accept what was reported to them as being their mother's preference for another product. Those having seen the commercials were also less willing to play with a parent denying the child's request, and fewer of them felt the child was still happy afterward. Again, there is equivocal evidence for advertising commercials potentially generating family conflict.

The same authors provide evidence for the manifest content of television having more positive outcomes (Goldberg and Gorn 1979). Exposure to a *Sesame Street* sequence showing nonwhite and white children playing together led middle-class preschoolers to choose nonwhites as playmates immediately after seeing the program, but delayed testing showed the effect diminished markedly. Replication with a group of lower income children failed.

Lull (1980*a*) gives examples of how family members use pieces of television content for relational purposes. The program watched creates an immediate agenda, allowing the child to use the television example to gain entry into the family conversation. Other uses of the manifest content are to help the person clarify values and attitudes through the viewing of controversial programing.

Studies of the effects of the latent content of television are quite sparse. Lull (1980*a*) discusses subtle learning experiences in his study but provides few examples of such experiences. Faber et al. (1979) give examples of learning at more subtle levels, particularly learning appropriate behavior in unfamiliar roles and situations. In general, we expect that, at change points in the development of the family life cycle, individuals thrust into new roles or situations may seek information about how to behave in those roles and consequently be more susceptible to the latent content of the shows that they watch.

Overview of Television Effects on Family and Interpersonal Behavior

Research on the effects of television on family and interpersonal behavior is generally sparse. The research that has been done focuses on social behavior at the individual level, undoubtedly because of the convenience of obtaining data from individuals rather than groups. At best, the relational and family system levels are brought into a discussion of the findings by implication.

For the possible sources of television influence, most of the research attention has been directed to the activity of television viewing *per se* and its effects on responses, such as an individual's coping behavior within the family or the displacement of other activities. A secondary focus has been on the manifest content of television programs. There is a marked lack of serious consideration of the forms of television messages, although Singer opens up a host of research possibilities. Finally, research evidence on the impact of the latent content of television is nonexistent.

The research suffers from the fact that most investigators find one of two possible effects. One group tries to find effects that may have negative consequences for interpersonal relations, for example a child's unhappiness when a purchase attempt has been rejected by his/her mother. Another group takes an exclusively positive approach by repeatedly isolating yet another function of television without the consideration of possible dysfunctions inherent in the same viewing act. At this juncture, what is needed is a broader definition of the impact on family relations that includes both positive and negative consequences. Within this broader definition, it may be necessary to hypothesize effects at more than one level of family functioning. A given behavior may, for example, have negative effects on the individual yet neutral or even positive effects at the relational or family level. For example, in the rejection of the child's purchase attempt, the frustration of the child may be seen as a negative individual effect, yet the maintenance of a set of family values concerning what is appropriate to buy and/or the role of the parent in the purchase attempt may have a positive effect across the family.

The majority of the content analyses have had a rather narrow demographic-sociological focus. Based on the premise that the source of effect of television comes from the manifest content that viewers see, a typical content analysis counts the proportions of women or minorities occupying various occupational roles. Within these schemas, little attention has been paid to the latent content of the shows, particularly the interpersonal behaviors of television characters in their interactions. Curiously, although communication is universally acknowledged as an obvious and vital part of actual family life, televised family communication aind interpersonal behavior have not been systematically examined.

The act of television viewing has been examined as it relates to the development of social and communicative skills. Zimbardo (1977) speculates that the inability to communicate effectively with others may arise from the passivity learned in responding to a televised world. In a program Zimbardo designed to help individuals develop communication skills, one participant described his experiences with television in this way:

> Perhaps the single greatest factor in my life was television. I was taught manners by my mother and not much by my father, but I was taught almost everything by television. I would estimate an average of at least three hours of TV a day, all my life. The largest factor that TV played in my life is that no feedback is required. When you watch TV, you are passive. I have always been good at listening and learning but poor at speaking to others.

Similar to Chauncey Gardner in Jerzy Kosinski's *Being There*, this participant, lacking in communication skills, was only able to watch, and not participate in, the social interactions of those in his environment. Although the example is compelling, our immediate concern is not with the effect of the act of television viewing on the development of social and communicative abilities but rather with the effects that the latent content of television may have on such development.

In both television and real-world interaction, it is impossible to think of any message sent by one person to another that does not in some way also carry a commentary on the relationship between the two parties. This commentary tells how the message is to be interpreted (Raush et al. 1979). Naturally, the recipient may respond to a message in a variety of ways. He or she may accept it, reject it, counter it, etc. An illustration of this point comes from the *Mary Tyler Moore Show*. Mary plays the executive producer of a television news program, and Lou Grant is her boss. In most of their interactions, Mary refers to her boss as Mr. Grant, while he calls her Mary. The other male characters in the show, junior in status to Mary, call their boss by his first name. This pattern is significant if we recall that communication occurs at both a content and a relational level (Bateson 1958; Watzlawick et al. 1967). The content level involves what is said in a conversation, while the relational level taps how what has been said defines the relationship between the partners. By using the terms of address that they use, Mary is defining herself as significantly lower in status than her boss, who accepts that definition. Their relationship can be seen as a complementary one, with Lou as the dominant and Mary as the submissive partner in the relationship. Mary's occasional attempts to change the definition of her relationship to Lou are often rejected by him. The relational level allows viewers to assign meaning to what they see and to understand the relationships defined by the interactants. Not surprisingly, Mary's deferential behavior and the complementary relationship that exists between Mary and Mr. Grant affect the audience. Few of the children in a recent study (Miller and Reeves 1976) knew that Mary was an executive; most assumed that she was a secretary. These children responded to the relationship definitions rather than to the manifest content of the roles.

It is apparent that more than the content level could be fruitfully considered if we want to understand what it is that viewers see on television. Since the relational level of the message supplies information on how the content is to be interpreted, content-analysis schemes would be strengthened by including relational information. To code relational communication, the messages of two individuals must be taken into account at the same time. This can be accomplished with the coding schemes used successfully in examining relational communication in actual marital dyads (Ericson and Rogers 1973) and families (Ellis 1976).

The latent content of television can also be examined at the individual level. Television's production conventions call for conversations between characters that differ in subtle ways from typical real-world interactions. Most television dialog is dyadic, people tend not to talk over, or interrupt, one another, they stay on the same topic, and they tend not to procrastinate about their decisions. In general, television characters seem to maintain a smooth and easy flow of interaction. Consequently, given the communication skills that they exhibit, most television characters would be considered markedly competent communicators (Weimann 1977; Argyle 1969). Although we need empirical evidence on the latter point, given the constraints imposed by production standards, viewers may indeed be exposed only to individuals demonstrating optimal communications skills. For a viewer to be a competent social interactor, he or she must not only know what the appropriate communication behaviors are but must also be able to enact them under a variety of circumstances. Excessive television viewing probably provides viewers with many models of communication competence, yet it may seriously limit viewers' opportunities to practice their own interaction skills. To ascertain the conditions under which television helps or hinders the development of a variety of social and communicative skills, we need first to ascertain the level of communicative competence exhibited by television characters.

The communication behaviors of television characters are related to the outcomes that the characters experience. If Bandura (1977) is correct and if much of our behavior is learned by observing how others are reinforced or punished for their acts, televised family communication patterns not only need to be cataloged but also subsequently related to particular outcomes. Two major outcomes in family life are stability and satisfaction. Stability refers to continuity in family life, that is, whether the relationships persist or are terminated; satisfaction refers to the happiness of the family members. These outcome variables are orthogonal in that relationships may persist whether they are satisfying or not satisfying. Conversely, under a variety of circumstances, relationships may terminate whether they are satisfying or dissatisfying.

We have little information on the relationship between televised interaction patterns and those that occur in real families. Specifying the connections between televised interactions and outcomes may help to clarify that relationship. Minimally, we should be concerned with interaction patterns that serve to optimize stability and satisfaction in couples and families as they are presented on television and occur in real couples.

We began this section by analyzing the ways that television viewing logically could be expected to influence interpersonal behavior and family functioning and the levels at which such a problem could be conceptualized and studied. As we considered each of the analytical categories, however, we found that little empirical research has been conducted to examine the effects of television viewing on families. What becomes strikingly apparent from the gaps in our scheme are the many directions that research could and should take within the next decade. In the remainder of this section, we will make suggestions concerning pressing questions as well as a research schema for studying the interpersonal implications of media effects.

Two broad questions dealing with both cognitive awareness and behavioral change arise from our discussion of the gaps in the empirical literature. The first question deals with the cognitive aspect of the problem and asks how much relational communication is perceived and understood by the viewer. In other words, what do viewers learn about interpersonal behavior from television portrayals? Although awareness may not be necessary for behavior to change, it would be useful to see if viewers perceived the same dimensions of relational communication usually isolated by theorists. The second question concerns the behavioral change issue. Essentially, it asks what effect television's relational and other latent content has on the interpersonal behaviors of family members.

The basic research strategy designed to deal with these questions would be two-tiered. It would first involve the collection of a number of television segments that illustrate the latent content issue that is to be explored. Families would be asked to view these segments and then to participate in an interaction task. This task might involve interacting directly on what they had viewed, or the family group could be asked to interact in order to study a particular aspect of their functioning. They could be asked, for example, to make a decision, plan something together, or even to engage in conflict. The interactions among family members could then be coded in order to assess the effects of the stimuli on their communicative patterns.

We have tried to emphasize the importance of moving beyond the study of individual effects to those at the relational or family level. We have suggested that relational level effects can be examined by considering the interaction that occurs between individuals. In addition to the various kinds of interaction analysis, relational level information can be examined by comparing across the perspectives of the family members. Measures like accuracy derived from the co-orientation model would be particularly useful in this regard (McLeod and Chaffee 1973). Mapping these relational level effects is not an easy task. Two factors contribute to its difficulty: First, we suffer from a dearth of conceptualization at the relational level. We have to develop the terminology to discuss effects that occur beyond the individual level. Second, the number of units to be considered rapidly increases when the relational level is considered. The average American family of four contains six dyads, while the six-person family has sixteen dyads or two-person groups. In many cases, predictions must be derived concerning the effects of certain media content on particular dyads within the family.

Finally, the research scheme that we have outlined demands both a more sophisticated approach to the analysis of television content and a serious consideration of family interaction. Both are necessary to advance our understanding of the direct effects of the media on family functioning.

Interpersonal Mediation of Television Effects

Because interpersonal processes play so important a part in so many forms of social behavior, it is logical to investigate the effects of television exposure as potentially mediated by communication with others in the person's social networks. Either directly from the influence attempts of another person or indirectly through less consciously motivated interaction, interpersonal communication could lessen or enhance the effects of television.

Many authors have suggested that family members and other signficant persons play such roles, but the evidence to support such claims is less available. Brown and Linné (1976), for example, argue that the family acts to develop a filter which, in turn, influences the impact of television content. The evidence for this claim is not convincing, largely because few researchers have bothered to analyze family processes as contingent or conditional variables producing different magnitudes of television effects within levels of the third variables or interacting with television exposure to produce significant effects.

Two separate questions are posed in this area of research: First, what is the evidence that families and other interpersonal socialization agents do have mediating effects? Second, what mediating effects could such interpersonal sources have were they induced to intervene in the child's uses of television? The latter is clearly a question for experimental research.

Field Studies of Interpersonal Mediation Effects

The simplest type of social mediation is viewing television accompanied by another person without explicit mediation attempts. Atkin and Greenberg (1977) found the mere presence of a parent had more effect than any specific mediation attempt in dampening the emotional responses of their children to television. Apparently, the effects of mere presence are not restricted to using parents as mediators. Children's recall of central and incidental program content was facilitated by the presence of an adult experimenter (Watkins et al. in press).

The presence of peers may also mediate television effects. Sproull (1973) reported that peer presence did not affect visual attention, but it did induce more overt television-related behavior (e.g., imitation, laughing) among 4-year-olds. Drabman and Thomas (1977) observed the behavior of 45 preschool boys immediately after they had viewed either an aggressive or a prosocial film. Those viewing with a peer were more likely to imitate the television content, particularly in displaying assaultive behavior after the aggressive program. Anderson et al. (in press) found that peers viewing together influenced each others' behavior in a synchronized fashion; when one child looked at the screen, the other children tended to do the same thing.

Korzenny (1977) looked at more specific types of mediation in examining the effects of combinations of "internal" and "external" orientations of parents in altering the impact of television violence. Internal orientation is defined as modes of parent-child interaction that provide the child with the necessary cognitive structure for evaluating his or her social behavior. The child's internal orientation did predict lessening of antisocial effects, but the mother's internal orientation was not related. Those high internal-orientation children who had low external-orientation parents and who viewed violent television only infrequently were the lowest in antisocial behavior. Korzenny's main conclusion was, however, that television remains a contributory source of socialization independent of parental practice and the child's internalization of moral values.

Parental mediation may not always be in the direction of reducing undesirable outcomes of television exposure. Robertson et al. (1979) studied 673 mothers and their grade school children with respect to the mediation of exposure to proprietary medicine commercials and the child's beliefs, attitudes, and requests to the mother regarding medicine. They concluded that parents do not provide critical insights allowing the child to discount messages but instead largely reinforce the commercial messages.

Cultivation studies by the Annenberg group have shown a positive relationship between heavy television viewing and perceptions of interpersonal mistrust among both adults and children. Such findings have relevance for interpersonal behavior, if we are willing to assume that perceptions of mistrust have direct consequences for overt interpersonal behavior. At least two studies are pertinent to mediation effects. Rothschild (1979) found that high cohesion of the peer group among third and fifth graders "inhibited or reversed" the cultivation influence on interpersonal mistrust. Parental influences were found by Gross and Morgan (1980) in terms of four characteristics of "family context" and cultivation effects for adolescents. High parental protectiveness in restricting television viewing, parents' perceiving television as useful and real, and low conflict over viewing eliminated the relationship between heavy viewing and interpersonal mistrust.

Experimental Studies of Interpersonal Mediation Effects

Several experimental studies have shown the effectiveness of interpersonal intervention in enhancing the prosocial effects of television programs. Lesser (1974) found that, among disadvantaged preschoolers, those children viewing *Sesame Street* with their mothers and talking with them about it were more likely than others to increase their learning of cognitive skills. Similarly, Singer and Singer (1976) found that adults can bridge the gap between the television content of *Mister Rogers' Neighborhood* and the limited span of attention of preschoolers by calling attention to specific features of the program. Other ramifications of their research on intervention are reported elsewhere (Singer and Singer, 1980, 1981; Tower et al. 1979; Singer et al. 1980). Collins et al. (1981) report that facilitating or linking comments by co-viewing adults facilitated the understanding of implicit program content by second graders.

Experimental intervention by a popular teacher supplying interpretive comments also had a strong influence on what preschoolers learn from a noneducational program (Corder-Bolz and O'Bryant 1978). These mediation effects may also hold for first graders according to Walling (1976) who concludes that combining television with parental discussion increased the child's mention of the behavior previously seen on television when analyzing problem-solving tasks.

Experimental induction of mediation also has been studied by advertising messages. Prasad et al. (1978) studied the effects of the discrepancy between commercial messages and the mother's evaluation of a product on 64 8- to 10-year-old boys. Mothers gave either of two experimental inductions: power assertive and reasoning. Both strategies had the effect of delaying the child's decision time in choosing a product in a simulated store situation. The reasoning strategy had the effect of reinforcing the mother's wishes when a low attractive product was shown in an ad, but the reverse effect was shown for the more attractive product. The power-assertion strategy backfired for the low attractive product.

Atkin and Miller (in press) asked the parents of 276 grade school children to view with the child and explain the content of one of three Saturday morning newscasts. The induction succeeded in stimulating the child's exposure and attention to all three newscasts and enhanced recall of one of the three programs (about girls in little league baseball). There was no evidence that the newscasts stimulated information seeking or interest in news topics generally.

Overview of Mediating Influences

It is obvious that the area of interpersonal mediating influences has been neglected. This is especially unfortunate in view of the growing importance of conditional and contingent relationships to communication theory and of their potential contribution to the development of applications for public policy. The relatively few studies are far from being critical tests of the various mediation hypotheses. Their evaluation is made more difficult by a lack of clear description of the experimental manipulations and data analyses in several instances. In the conduct of the experimental mediation studies, there are some difficult problems to overcome. It is difficult to recruit a representative sample of mothers and teachers and to get them to cooperate in carrying out the manipulation strategies under natural conditions. It is important to do careful manipulation checks under such conditions and to use larger groups than would be needed in more easily controlled laboratory conditions.

Regarding the cultivation studies, there is a need to see how the perceptions of interpersonal mistrust linked to television viewing are related to overt interpersonal behavior. Do these perceptions affect the person's interactions in the family and with peers?

There is a strong need to conceptualize more clearly the ways parents and other agents of socialization could enhance or mitigate television's effects. There have been relatively few attempts to do so. McLeod et al. (1972) examined three types of strategies: control of the use of the set; interpretation or discounting of the content of programs; and acting on the connection of television content to the criterion behavior. Most experiments have used relatively simple interventions, such as discussion (Walling 1976), explaining the meaning of the content (Atkin and Miller in press), and interpretive comments (Corder-Bolz and O'Bryant 1978). Prasad et al. (1978) use the presumably more complicated distinction between power-assertive and reasoning techniques. Messaris and Sarett (1981) develop a more elaborate scheme: focusing on the child's proficiency regarding the representational conventions of commercial television and contributing to the child's perceptions of the validity and generalizability of specific types of programs through articulation of cognitive categories, shaping of behaviors, and development of social relationships. More work is needed in the development and explication of these intervention strategies.

Finally, there is a need to evaluate carefully action programs such as the Parents Participation Workshops in terms of what populations can be reached, what the participants learn, how they transmit this learning to the children, and, most critically, what effect this has on what the children learn from television.

Conclusions

It is apparent that the bright promise of gaining new knowledge about the role of interpersonal relations in mediating the impact of television contained in the Surgeon General's committee report was not fulfilled very well by the research of the seventies. One bright spot in the picture is the fact that the majority of the most promising work has been published in the past 2 or 3 years. Then, too, there are new developments, independent of the work reviewed here, taking place in the areas of family study, interaction analysis, and the identification of mass media effects that, if brought together, could bring much more systematic and sustained examinations of the issues of interpersonal mediation in the decade ahead.

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TELEVISION AND HEALTH

Introductory Comments

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It is now recognized that television is a major source of observational learning and, for many persons, a definer of cultural norms. Indeed, it has become one of the primary agencies of socialization that our society possesses. But there is still little recognition that the 30 hours a week of television typically seen by American viewers may have great significance for their health. Although research in the area of television and health is relatively new, there are advances in the behavioral and medical sciences, as well as promising preliminary research in television and related technologies, that point the way to a research agenda in the health area in the 1980s.

In the medical arena, there is growing awareness that biomedical advances have led to a shift in the burden of illness away from acute, often infectious disease to conditions where issues of personal behavior play a key role in the cause and course of the illness. The current leading causes of death among adolescents and young adults are accidents (chiefly automobile), suicide, and homicide. Along older persons, heart attacks, stroke, and cancer, particularly lung cancer, head the list. *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention*, published in 1979, concluded that culturally sustained behaviors and lifestyle factors now account for as much as half of the current mortality and are the leading causes of morbidity in the United States. Television can be presumed to influence health attitudes and health behaviors.

This section of the report reviews the current status of health-related television research, with an emphasis on opportunities for future research. There are studies that shed light on the unsuspected influences of television on health beliefs and on the unexplored potential of television for health promotion.

Several types of television influences on health attitudes and behaviors have been described. There are studies of the direct health messages of television advertising of medicines. There are also analyses of portrayals of medical conditions, physician and patient behaviors in television dramas for their message content.

More indirect health messages have also been investigated, such as content analyses of television dramas to determine the type, frequency, and context of portrayals of lifestyle behaviors that are significantly health-related, for example, smoking, use of alcohol, risky driving, or use of seat belts.

Factors influencing the effectiveness of public interest health programs have been reviewed. Mixed media campaigns have been analyzed in addition to those relying exclusively on television.

The uses of television for institutionalized persons and for therapeutic purposes have also been examined.

Finally, it has been noted that, with newer technologies such as cable television and satellite television, there are expanded possibilities for health education and therapeutic uses of television.

As the review of Gerbner et al. shows, there are several health-related behaviors portrayed on television that merit attention. These include the health effects of violence, the depictions of mental illness, and the several kinds of behavior that have been identified as risk factors for the leading causes of mortality, such as nutrition and dietary patterns, smoking, and alcohol use. Portrayals of doctors and health settings are also of significance. These portrayals are embedded in the dramatic and entertainment programs, and they convey a consistent message, particularly to young viewers. In the behavioral sciences, there is consensus about the significant impact of behavior observed in television dramas. Script writers and television producers are generally unaware of the potentiality for incidental learning of health-damaging—or health-promoting—lifestyles as people watch their dramatic productions. Entertainment television is not, of course, expected to be a health educator. Yet minor changes in portrayals, which would have no effect on the dramatic appeal of the programs, might have major implications for good health of the viewers.

Although this volume is not particularly concerned with television commercials, it cannot ignore them in a discussion of television and health. As Atkin points out in his review of consumer roles in another section of this volume, it is clear that children's behavior is influenced by advertising messages. The average child sees literally thousands of commercials every year, many of which are for food products, and half are for low-nutrition items. Some advertisers are beginning to include information about the importance of good nutrition—such as having a nutritious breakfast—and these efforts should be recognized and encouraged.

Solomon's review not only describes several successful health campaigns on television but also analyzes the reasons for the successes—and the failures—of the campaigns that have appeared over the past several years. Some experts are still pessimistic about the value of campaigns; others are more optimistic and have stressed the importance of social and behavioral systems instead of simple immediate effects. In discussing the possible reasons for successes and failures of health campaigns, Solomon emphasizes the need for problem analysis, of how and why the campaign was planned, selection of the media, design of the messages, and evaluation of all components of the campaign.

Successful campaigns have often been coupled with related community efforts. These combined efforts have demonstrated areas that deserve research attention:

1. Specific culture-sensitive information should be developed regarding the threat to health.
2. Specific culture-sensitive information should be provided about skills helpful in coping with the health risk factors and living with chronic disease or dealing with physical handicaps.
3. Methods of providing prompt reinforcement for early changes in health-promoting behavior patterns need further development.
4. Community organization should be studied for finding ways that provide respected role models for health-promoting behaviors and long-term social reinforcement of such behaviors.
5. Studies of family involvement in television-mediated health education are needed.
6. Ways of using family support to enhance motivation to engage in and sustain health-promoting behaviors also need further study.

Similar conclusions were reached at a conference held in September 1980, sponsored by the Institute of Medicine, on the use of mass media for health promotion and disease prevention. The conferees listed the following issues:

What is the message to be conveyed, and who shall develop it?
What is the target audience, and who selects it?
What is known about how the media can be most effective in reaching the target audience?
How can health-damaging material in entertainment programing and mass media be counteracted?
How can access to the media be assured for health-promoting messages and programing?

In the near future, there should be more information available about the effectiveness of health campaigns, because several large-scale projects, some of them funded by the National Institutes of Health, are now underway. An important research goal for the 1980s is the evaluation of such campaigns to learn how to increase their effectiveness even more. Considering the vast numbers of people reached through television and the comparatively low cost per person, health campaigns to prevent illness could be a significant factor in general lowering of costs of health care. This is especially true when technology of cable television and satellite will make it possible to reach more people and more targeted audiences.

Rubinstein and Sprafkin's review points up how little research has been done to evaluate the effects of television on the lives of institutionalized people. Similarly, the use of television for therapeutic purposes, such as helping people to cope with fears and phobias, is only in its beginnings. As Rubinstein and Sprafkin's study shows, television can be used effectively to facilitate positive changes in social behavior of institutionalized behaviorally disturbed children.

These exploratory reviews show that much remains to be done in areas already under scrutiny and that there are many research opportunities in the area of television and health. In addition, there are some totally unexplored areas. There have been no attempts to assess in systematic studies the direct effects of television-viewing behaviors as health influences in their own right. Several issues appear to merit attention.

The passivity of television watching has not been studied with regard to the physical fitness of children or adults. The relationship, if any, of the amount of physical exercise to the amount of viewing time is not known. Nor is there any clue to whether early and continued viewing establishes enduring patterns of passive, rather than active, participation.

Eating behaviors during television watching could have great significance. Conventional wisdom states that there is a high association between the eating of junk foods and television watching. This has not been systematically studied. It is also believed that many adults link television viewing with the drinking of wine and beer and systematically increase their alcohol intake as a result. If true, the cumulative effects of conditioned eating and drinking patterns could have serious long-term health effects.

The content of television programs can have varying arousal effects, and the continuing noise levels of television may operate as a chronic stressor for some persons. It is not known whether stress can be induced by the interacting effects of television arousal and responses that are given to other stimuli of persons in the viewing environment. On the other hand, television seems also to have a potential, at other times, for reducing stress and dissipating tension for some persons who have stressful work situations or other sources of tension. For some, it is a cause of insomnia; for others, it is a cure. One practical question here is: Are there children suffering chronic fatigue from staying up late to view television? All of these arousal and stressor effects of television need to be studied as potential factors influencing health status.

On another aspect of television, it should be mentioned that the news reporting on television offers a separate avenue for communicating health information. It would appear that those who report the news are willing, even eager, to receive new and interesting health-related information. Media reporters at the Institute of Medicine conference, mentioned above, suggested that news and news coverage may have contributed to salutary changes in health behavior. Research is needed to establish the relative credibility of news reports on health issues versus public service announcements and other explicitly educational approaches.

In summary, television is a pervasive source of intended and unintended information, myths, and persuasions about health matters. The potential for use of television as a major adjunct to developing and enhancing healthful behaviors seems to be very great. In the coming decade, there are many promising directions for future research to facilitate use of television for health education, health promotion, and disease prevention. The Institute of Medicine conference summarized some of them as follows:

1. To investigate and define health knowledge and attitudes of the general public, and of specific subgroups, that may predispose people to accept or reject advice about health. Such information should be available to those designing media-based health campaigns.
2. To examine the health messages received through television and to assess their impact on children, adolescents, the elderly, and other special populations. What do they learn about health from television—and from radio, rock music, magazines, and other media? How do these negate or reinforce one another? How does media influence compare with that of parent and sibling role models or with peer pressures?
3. To examine the impact on physical and mental health of new media technologies and their uses.
4. To investigate the effectiveness of television technologies and possible other technologies in helping the elderly to maximize coping skills, and the disabled and chronically ill to minimize functional dependency and maximize their coping skills through systematic television presentations tailored to their needs. This kind of research may have special relevance for persons in institutions.
5. To clarify the nature, type, and scope of health information currently available through television and other mass media and the degree to which the average person is exposed to the body of health knowledge that is available.
6. To identify specific population subgroups at risk for excessive morbidity and mortality, to define the health problems of these groups, and to analyze what is known about the health knowledge and attitudes of these groups. Such information could then serve as the basis for the development of multimedia health education efforts targeted at these audiences.
7. To investigate the formal and informal channels that now exist for the communication of health information, including research results, from health professionals to television writers, for both news and entertainment. How health information is communicated to producers and network executives also needs to be studied. Such investigations might explore ways to improve and regularize communication and collaboration between health professionals and the television industry.

Programing Health Portrayals: What Viewers See, Say, and Do

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It is appropriate that this volume of scientific progress provides consideration to health portrayals and influences since the original report of the Surgeon General's Scientific Advisory Committee on Television and Social Behavior include research on health. Although investigation of television's contribution to health-related conceptions and behaviors has lagged behind violence, sex, social roles, and other concerns, several policy and research developments, not to mention salience to the public health mission, make such attention timely as well as needed.

One development is the Surgeon General's recent call for a reordering of health priorities. *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* (1979) concluded that culturally sustained behavioral and lifestyle factors account for as much as half of U.S. mortality.

A shift in health priorities to cultural and behavioral research highlights the central role of television in socializing individuals and stabilizing lifestyles. The success or failure of educational and informational campaigns depends largely on the broader cultural context into which they are injected. Few campaigns can succeed without knowing what they are up against. Today, that means knowing what messages and images television as a whole discharges into the mainstream of common consciousness.

Our long-range project, called Cultural Indicators, was given its first major impetus in the research for the original report to the Surgeon General. It has tracked the messages and images embedded in network television drama (and recently commercials), and viewer conceptions and behaviors, in many areas of life. A pilot study of health-related messages and images, drawing on the entire Cultural Indicators data bank, was commissioned for this report by the National Institute of Mental Health. Finally, a new theoretical formulation emerging from our research and consistent with the results of a wide variety of independent investigations enables us to cast our review of findings on television's cultivation of viewer conceptions and behaviors in a coherent framework.

Unlike other media, television is used relatively nonselectively. Most viewers watch by the clock rather than by the program. Television is like a ritual. It involves the average American household for 6½ hours a day in a stable and repetitive world of shows, news, and commercials designed to hold and sell the largest possible public at the least possible cost. Its entertainment programs and commercials, with potential health (and other) lessons embedded in them, reach tens of millions of viewers. Even more importantly, these messages reach viewers who would otherwise not expose themselves to such information.

Single programs and isolated messages or even campaigns may be submerged in the daily and weekly rhythm of the television ritual. But the recurrent patterns of health information in many types of programing become parts of the inescapable mainstream of our widely shared symbolic environment.

This is a review of what we know and what we need to know about these patterns and their lessons for viewers. The evidence is fragmentary and uneven. It is more indicative of the potential and promise of such research than it is complete or definitive. Nevertheless, it is suggestive of the problems that must be taken into account in designing health-education efforts and in addressing television directly as a central sector of the new frontier in health promotion and disease prevention.

Our pilot study was conducted as a preliminary step in the full development of indicators of health-related messages embedded in television programs and of their relation to viewer conceptions and behaviors. It used the cumulative Cultural Indicators data bank and included a special study of 1 week's network dramatic programing, analyzing portrayals of selected aspects of medicine, illness, nutrition, drinking, smoking, body weight, and safety. The source of research results not otherwise cited or specifically identified will therefore be the pilot study and the Cultural Indicators data bank of television content and viewer conceptions of social reality. (For details of methodology and other findings see Gerbner et al. 1978, 1979, 1980*b*.)

What Viewers See

The average viewer spends about 30 hours a week with the television set. Health-related concepts and behaviors appear many times in programs and commercials. Dramatic, social, and sales functions, rather than therapy or science, govern the presentations.

Health-related portrayals cover such a wide range of subjects and behaviors that there is no reason to assume that television treats them in any particular manner, except as they fit its dramatic conventions and economic and social functions. The only codified mechanisms affecting production are the television codes.

Each network, many major stations, and the National Association of Broadcasters (NAB) all have similar codes governing the acceptability of programs and commercials. These standards have developed over the years in response to the interests of and pressures upon broadcasting as a government-licensed business.

Health-related portrayals have long been sensitive and troublesome. Lengthy sections of the NAB Code regulate the advertising of medical products and practices, generally discouraging the portrayal of ailments, distress, "morbid situations," and sweeping claims. Medical professionals, or actors representing them, should not sell products but may present institutional messages. Laboratory settings should be genuine, and research claims should stick to the facts. "Appeals involving matters of health which should be determined by physicians should not be directed primarily to children." Hard liquor is out, beer and wine commercials should be in "the best of good taste and discretion." "Personal products . . . must be presented in a restrained and obviously inoffensive manner." "Representations which disregard normal safety precautions shall be avoided."

Program standards are less stringent. They urge "responsible" handling of violence and its consequences, avoiding agony and gory details. "Narcotic addiction shall not be presented except as a destructive habit. The use of illegal drugs or the abuse of legal drugs shall not be encouraged or shown as socially acceptable." "Special precautions must be taken to avoid demeaning or ridiculing members of the audience who suffer from physical or mental afflictions or deformities." The NAB Code urges producers to "deemphasize" the use of liquor and the depiction of smoking. And: "Professional advice, diagnosis, and treatment will be presented in conformity with law and recognized professional standards."

Adherence to the NAB Code and to similar provisions of the network and station codes (which is by no means universal) no doubt tends to inhibit some and direct other types of health-related representations into less troublesome directions. However, many presentations still cast serious doubt upon the efficacy of the codes and of the concept of self-regulation itself, at least as far as certain health-related portrayals are concerned.

The Risks of Prime Time and Weekend Daytime Television

The world of prime time (8 to 11 p.m.) and of children's weekend-daytime (8 a.m. to 2:30 p.m.) network dramatic programing is by and large a man's world of action, power, and danger. Our annual analyses since 1967 of nearly 5,000 major and some 14,000 minor characters, in over 1,600 programs, reveal these consistent patterns: Men outnumber women at least 3 to 1; young people comprise one-third of their real numbers; characters over 65 make up 2 percent of the television population but 11 percent of the real world's; professionals, law-breakers, law-enforcers, and entertainers greatly outnumber all other working people; crime is at least 10 times as frequent as in the real world; and an average of 5 acts of violence per hour of prime time and 18 acts per hour in children's weekend-daytime programs victimize half of prime time and over two-thirds of children's time major characters.

Pain, suffering, or medical help rarely follows this mayhem, whose function is not preventive or therapeutic but dramatic and social. Our studies (e.g., Gerbner et al. 1979) show that symbolic violence serves to resolve conflict and to demonstrate who can get away with what against whom. Hardly anyone dies a natural death on television.

The structure of that demonstration provides a clue to the dynamics of television's distribution of resources, including bodily and mental integrity. Adult white males are most likely to get involved in violence and, along with older males, the most likely to get away with it. The balance of powers can be seen in the ratio of those who inflict to those who suffer violence within each social group. Old, young adult, and minority women, and young boys (children-adolescents) are the most likely to be victims rather than victimizers in violent conflict. Children's programing increases their unfavorable ratio of risk, especially for young women. In terms of fatal victimization in prime time, we found that old women involved in violence are the most likely to get killed, followed by lower-class men and old men. (There is virtually no killing on children's programs.)

Over the 11 years (13 week-long samples), we have monitored trends in television content, on the average only 6 to 7 percent of the major characters have had injuries or illnesses that require treatment. About 3 percent of the major characters have been portrayed as mentally ill, and about 2 percent in each sample have been physically handicapped. The average prime time viewer sees about nine ill or impaired major characters each week.

In children's programs, despite the greater mayhem, only 3 percent of characters get injured or sick enough to require treatment. Mentally ill and handicapped characters appear very infrequently.

Physical illness and injury seem to affect heroes and villains, males and females, and other groups of characters alike. The physically handicapped characters, although few, tend to be older, less positively presented, and more likely to be victimized. However, the most peculiar dramatic function characterizes those who are presented as mentally ill.

Mental Illness

To the extent that the behavior of mentally ill persons violates some social norms, they suffer the fate of all those whom culture labels deviants. But the cultural image of mental illness has some additional ingredients. Among these are unpredictability, danger, and sin. Anyone might go berserk, and being once so labeled means danger forever. Earlier studies of mental illness in popular fiction, news, and other materials suggested that some moral flaw tends to justify brutality toward the persons depicted as mentally ill. These studies (Nunnally 1961; Gerbner 1961*a*, 1961*b*; Gerbner & Tannenbaum 1962) showed that the image of the mentally ill in the mass media was farther removed from the characteristics established by mental health professionals than was the image of the general public. In other words, instead of mediating between the experts and the public, media imagery pulled the public image away from the image of the experts in the direction of traditional prejudices.

Our studies found that about 17 percent of prime time programs involve some significant depiction or theme of mental illness. About 3 percent of major characters are identified as mentally ill, mental patients, former mental patients, and so on. In the late evening, with more violent programing, the percentage doubles.

Although relatively small in numbers, the mentally ill make up the group most likely both to commit violence and to be victimized in the world of television. Out of all prime time dramatic characters, 40 percent of "normals"—if we may use the term—are violent, but 73 percent of those characterized as mentally ill are violent. Forty-four percent of the normals but 81 percent of the mentally ill become victims of violence.

Ten percent of the normals are killers, and 5 percent are killed. But 23 percent of those characterized as mentally ill are killers, and 23 percent are killed. The treatment is a tooth for a tooth; no other group in the fictional population suffers (and is shown to deserve) such fate.

While only 24 percent of all prime time female characters are violent, 71 percent of mentally ill prime time female characters are violent. The label of mental illness not only makes women almost as violent as men, but it also makes women more vulnerable to victimization. For every 10 normal male victims of violence there are 17 mentally ill male victims; for every 10 normal female victims of violence there are 25 mentally ill female victims.

The most "mental-illness-prone" television occupations are clerical, sales, manual laborers, criminals, and scientists. The least "mental-illness-prone" occupations are owners and proprietors, policemen, farmers, and ministers.

Television Doctors

A typical viewer of prime time television will see a large cast of dramatic characters in well-defined roles. The cast will include about 68 major and 272 minor speaking parts every week. Children who watch weekend daytime programs (which take up only 10 percent of their total viewing time) see 42 major and 98 minor dramatic characters each weekend. Their television exposure to roughly between 400 and 500 vivid characterizations each week can be seen as a compelling curriculum in human behavior.

Professionals play a disproportionately large role in the world of television. Health professionals (doctors and nurses) dominate the ranks of professionals, numbering almost five times their real-life proportions. Only criminals or law enforcers are more numerous than health professionals in the world of television, despite the paucity of sick characters.

The typical viewer sees about 12 doctors and 6 nurses each week on prime time alone, including 3 doctors and 1 nurse in major roles. By comparison, the same viewer will see only one scientist in a week's prime time viewing, and a scientist will be cast in a major role once every 2 weeks. Visible as health professionals are in prime time, they are virtually absent from weekend-daytime (children's) programs.

About 9 out of 10 television doctors are male, white, and young or middle-age. Nearly all nurses are female and young or middle-age; 9 out of 10 are white.

Doctors probably fare best of all occupations on television. Compared to other professionals, they are relatively good, successful, and peaceful. Less than 4 percent of television doctors (major characters) are evil, which is half the number found in other professions. Personality ratings show doctors a bit more fair, sociable, and warm than most characters. Doctors are also rated smarter and more rational, stable, and fair than nurses.

Two studies focusing specifically on "doctor shows" (prime time series featuring medical professionals) illuminate the world of professional medicine on television. McLaughlin (1975) found that doctors "symbolize power, authority, and knowledge and possess the almost uncanny ability to dominate and control the lives of others." They are easily accessible to patients, command nurses (who never disobey their orders), advise each other, but rarely receive advice from patients or orders from superiors and, when they do, often disregard them. Yet they are seen as "ethical, kind, responsible to the requests of their patients, honest, and courageous." In 40 percent of medical cases, television doctors risk status or prestige to perform an unusual or dangerous treatment; in 13 percent the doctor disobeys a rule, convention, or advice, always succeeding, against odds, to treat or cure some disease or settle some crisis. The typical male doctor confronts the typical female nurse and the usually female and younger patient from a position of daring and authority. "Female patients are twice as often bedridden as male patients. An image common (46 percent) of female patients is that of a bedridden woman with a strong man—husband, doctor, or romantic partner—at her bedside." The work of the television doctor is one of individual and almost mystical power over not only the physical but also the emotional and social life of the patient. "If he just followed the rules," concludes McLaughlin, "or left private matters to the patients themselves, or did not risk life, limb, love, or money, things would not work out."

Warner's (1979) study of another sample of prime time "doctor shows" confirmed these findings and also noted that 61 percent of the doctors' duties were performed during house calls or in the field. The television physician, Warner found, thrives on private relationships with patients, and wields absolute authority over auxiliary medical personnel, but is rarely shown at home or with a spouse or family of his own. Television doctors give advice and orders twice as frequently to female patients or to patients' wives as to male patients or to patients' husbands.

Conflicts arise when the young doctor confronts the more traditional and conservative stance of the senior physician or administrator, or the female doctor. The few female doctors on prime time television are shown as more emotional and less professional than their male counterparts. Of all professionals, only nurses and women doctors appear to have any emotional problems of their own. In Warner's sample of 45 male and 5 female doctors, only one was shown at home—a woman (the only one depicted as middle-age), who lived with her cat. Coming home after a trying day at the hospital, she advised her pet: "Don't ever become a career cat."

The Turmoil of the Daytime Serial

The world of the daytime serials is one of interior turbulence, both physical and psychic. Cassata et al. (1979) studied all daytime serials aired in 1977 and found that "sickness and injury is a most important and pervasive problem," with nearly half of all characters involved in health-related occurrences. Identifiable occurrences were psychiatric disorders, heart attacks, pregnancies, automobile accidents, attempted homicides, attempted suicides, and infectious diseases, in that order. The principal killers were homicides, car accidents, and heart attacks. Although men got sick and hurt more often, women were more likely to die, especially of a bad (if not broken) heart. Four times as many women (2.3 percent) as men died of cardiovascular disease. Half of the pregnancies resulted in miscarriages and 16 percent in the death of the pregnant woman.

Mental illness strikes women most frequently and usually results from guilt, trauma, and inability to cope. Katzman's (1972) study of 1 week's daytime serials found six cases of mental and psychosomatic illness, five cases of physical disability, four pregnancies, three successful medical treatments, and two instances of important medical research.

In a world in which "good" characters are likely to recover and "bad" characters deserve their fate, death, note Cassata et al., "is almost always swift and sure, with little suffering involved. In fact, the longer one suffers, the better one's chances for survival seem to be . . . ; suffering has more to do with an individual character's dramatic nexus than with the nature of his or her particular affliction."

Although women and men are about equal in number in the world of daytime serials, they are far from equal in status. Katzman found 60 percent of the men but only 5 percent of the women in high status professions (doctors, lawyers) or in business; 60 percent of the women were nurses, secretaries, housewives. Despite seven female professionals (five doctors, a judge, and a businesswoman), most women were patients, clients, wives, or service workers to male bosses.

Not only are professionals greatly overrepresented in daytime serials, but, as Downing (1975) found, 68 percent of all professionals are in the field of medicine, and, as Perloff (1975) observed, roughly 80 percent of the men are doctors. Many of them work in hospital settings in such long-running shows as *The Doctors* and *General Hospital*, and others come in for the rescue when life is at stake and other forms of help and healing fail.

As in prime time doctor shows, women doctors in daytime serials are strong and long-suffering characters whose professional sacrifices often are at the expense of personal happiness. Downing (1974) cites the case of Dr. Williams in *General Hospital*, who "treats her patients with love, achieving miraculous results. She has risen above the personal tragedies of losing her husband and child without residual bitterness, having in fact recommended the woman to whom she lost her husband for a permanent position on the staff" (p. 136).

Almost all the action in the world of daytime serials takes place indoors and consists of talk. Katzman's analysis of 844 conversations found 277 in living rooms, with health as the most frequent topic. The second-ranking location was a doctor's office, and the fourth a hospital room (a business office was third). Overall, aside from small talk and general business or professional conversation, health was the largest single topic of conversation.

It may well be that daytime serials comprise the most prolific single source of medical advice in America. The content and nature of that information have not yet been studied. The general structure of the advice, however, has been analyzed by Turow (1974) who compared it with the pattern of advising and ordering in prime time. Turow classified advising episodes between men and women as stereotypically "masculine" (business, law, government, crime, professional medical advice), "feminine" (love, family, home, the arts, and health in a nonprofessional or business context), or neutral and coded them by the sex of the advice-giver. In prime time, 53 percent of the advising revolved around "masculine" subjects, and 70 percent were given by men. Women gave most "feminine" or neutral advice, even when they were cast as professionals.

In daytime serials, only 4 percent of all advising dealt with "masculine" subjects, while 60 percent was neutral and 36 percent was "feminine." Nevertheless, men still controlled most cross-gender advising by giving 56 percent of all directives (68 percent on neutral, 26 percent on "feminine," and 6 percent on "masculine" subjects).

Turow concluded:

> Another way in which men maintained control of the action was through the accentuation of the role of the medical doctor. . . . Doctors, who learn professionally what women are supposed to understand "instinctively," could be shown to direct women in stereotypically female areas while still maintaining the traditional compartmentalization of knowledge. The importance of male doctors is seen in the fact that they initiated 71 percent of their sex's "feminine" advising and ordering episodes.

Even in this world of strong and capable women, when things get rough, the ultimate miracle healer is the male doctor.

Nutrition in Programs and Commercials

Children's programing and commercial messages broadcast during children's program hours have long been the subjects of research and regulatory and legislative concern. During the 1970s, many studies documented the relatively profitable, exploitive, and unchanging nature of children's programs and commercials. The Federal Communications Commission's 1974 Policy Statement on Children's Television Programs reemphasized the special obligation of broadcasters to operate in the interest of the child audience and directed broadcasters to make a "meaningful effort" toward compliance. The Task Force appointed to monitor the effort found insignificant compliance and recommended various regulatory options. Meanwhile, the Federal Trade Commission concluded its investigation of television advertising directed at children and proposed to regulate it. Industry response and heavy lobbying in Congress stymied both FCC and FTC action and for a time blocked approval of the FTC's annual operating budget.

The establishment of the factual basis for citizen concern and regulatory action received major initial impetus with the publication of Volume 4 of *Television and Social Behavior* (Rubinstein et al. 1971), sponsored by the Surgeon General's Scientific Advisory Committee. Four reports in that volume by Scott Ward and his associates explored cognitive developmental trends in children's perception of commercials. One critical finding was that young children often could not differentiate between programs and commercials.

The quantity and quality of food commercials on children's television were also well documented in research conducted through the 1970s. During a year, the average child viewer will see about 22,000 commercials, 5,000 of them for food products, over half of which are high-calorie, high-sugar, low-nutrition items (Choate 1975, 1976).[1] Barcus (1971) found that 67 percent of Saturday morning commercials and over half of general children's program commercials (Barcus & McLaughlin, 1978) were for sugared cereals, candy bars, and other sweets, usually presented as snacks to be eaten between meals. In the second part of the same report, nutritionist McLaughlin pointed out that, while dietary goals recommended by the U.S. Senate Select Committee on Nutrition and Human Needs (1977) urged reduction in the consumption of refined and other processed sugars, most food commercials directed at children promote the use of such sugars. Masover and Stanler's 1978 report for the U.S. Senate Select Committee (1977) found that 70 percent of food ads promoted products high in fats, cholesterol, sugar, and salt, while only 3 percent were for fruits and vegetables. Another study by Mauro and Feins (1977) found that only 7 percent of commercials promoted dairy products, fruits, and breads and that most of the rest were devoted to the easily mass-produced and profitably marketed, but low-nutrition, packaged products. A comprehensive review of much of the relevant research (Jeffrey et al. 1980*b*) concluded that "television advertising researchers have developed a sophisticated technology aimed not only at selling products to children, but also aimed at socializing these children to eventual consumer roles."

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[1] Advertisements for medicines or drugs virtually never accompany "children's" programs (Barcus 1977). In fact, our data show that they comprise only about 6 percent of all television commercials (N = 2556). "Illicit" drug use rarely appears in television drama (Fernandez-Collado and Greenberg 1978). Greenberg et al. (1980) confirmed this finding but argued that, given the amount of time people spend watching television, even a phenomenon with relatively low frequency may have powerful, cumulative consequences. This fits with Milavsky et al.'s (1975-76) finding that, while teenagers' degree of exposure to drug advertising is negatively related to their use of illicit drugs, those who see more drug advertisements are more likely to use proprietary drugs.

Food products, however, are not found only in commercial messages. Our pilot study[2] of a typical week's prime time network dramatic programs reveals that eating, drinking, or talking about food occurs about 9 times per hour. More than three-quarters of all dramatic characters, or some 25 each night, eat, drink, or talk about it, often more than once. Weekend-morning programs present an additional 84 instances of eating and/or drinking, or nearly 4 per hour. (Interestingly, this is less than half the prime time rate, although food and drink commercials dominate "children's" advertising.)

Prime time nutrition is anything but balanced or relaxed. Grabbing a snack (39 percent of all eating-drinking episodes) is virtually as frequent as breakfast, lunch, and dinner combined (42 percent). In weekend-daytime children's programs, snacks go up 45 percent, and regular meals decline to 24 percent, with "other meals" making up the rest. The snack is fruit in only 4 or 5 percent of these episodes.

In episodes involving drinking, the most prevalent beverages are alcoholic. Coffee and tea are next. When eating and drinking occur simultaneously, more than half of the episodes are a meal with coffee, tea, or alcohol. A similar analysis of a week's prime time programs by White and Sandberg (1980) confirmed that one-third of the prime time program diet consists of alcohol and coffee.

Although most of the attention of nutritionists focused on television commercials, Kaufman's (1980) comparative study found that, in fact, there are more representations in programs than in commercials. Furthermore, the nutritional value of program references is no greater than that of commercials. Kaufman analyzed 10 top-rated prime time programs and the commercials included in them. She found that by far most references to beverages (particularly alcoholic) and to sweets were in program content. On the other hand, commercial references to fruits and vegetables outweighed program references to these foods by a ratio of better than three to one. A point-by-point comparison of eating behavior on television along nutritional guidelines exposed the contradictions between the dramatic requirements and motivations (such as reward, punishment, bribe) and recommended eating habits.

Our analysis of prime time and weekend-daytime commercials found that food advertising accounts for more than a quarter of such commercials. Furthermore, food-related activities (including mention of food or drink) occurred in over 40 percent of commercials. Sweets, snacks, and nonnutritious ("junk") foods made up nearly half of food commercials.

Nutritional appeals were noted in only 9 percent and stressed in another 7 percent of food commercials. A study of such appeals on children's programs by Mauro and Feins (1977) found taste first, followed by texture, fun, convenience, and peer status, with health and nutrition last.

Impairment, Obesity, Safety

Prime time characters are not only healthy (though often vulnerable to inflicted injury) but are also relatively safe from accidents, stay slim at all ages, hardly ever need glasses (even in old age only one in four wears them), and rarely suffer impairment of any function.

Obesity, a problem that plagues from 25 to 45 percent of the American population depending on the estimate, claims few victims on television. The dramatic functions of being fat are limited to certain characterizations, often further aggravating its prejudicial associations. Our analysis of the 1979 sample week of programing found fewer than 6 percent of all males and 2 percent of all females (none of them leading characters) obese. Overweight male characters are somewhat more likely to be found in food and medicine commercials, with the largest number (13 percent) in "junk food" (sweets, chewing gum, etc.) advertisements.

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[2] The pilot study examined the portrayal of eating, drinking, nutrition, and safety in a week-long sample of prime time and weekend-daytime (children's) programing. It was conducted as part of the 1979 Cultural Indicators annual message system analysis. This pilot study isolated episodes of eating, drinking, or talking about food/drink only in the 1979 sample of dramatic programing.

In Kaufman's (1980) study of 537 prime time television actors whose weight could be clearly coded (as obese, overweight, average, or thin), 12 percent were overweight or obese, despite the fact that these characters rarely ate a balanced meal or gave full attention to what they ate. Children, teenagers, and young adults were never obese. A disproportionate number of black (16 percent) and oriental (80 percent) characters were overweight or obese. Ninety percent of all obese people on television were black—a figure clearly disproportionate to their representation (10 percent) in the sample (or population). Although obesity is related to age, ethnicity, and poverty both on television and in real life, television exaggerates reality.

Despite all the violence on television, industrial and highway accidents—the leading causes of violent injury and death in America—are rare. Moreover, television characters rarely take precautions against them. Only daytime serials realistically reflect some of the lethal consequences of the excessively mean and dangerous world of television.

Driving and riding in cars are shown as by far the leading means of transportation. (Public transportation is hardly ever used.) Our pilot study found only one instance of characters using a seat belt; that was followed by wild stunt driving without a belt. Many commercials, more than 1 in 10, involve driving or other car use in which seat belts could be shown. Our analysis of commercials found 283 such situations; seat belts were shown or used in only 65 (23 percent).

Smoking

The impression of some that television characters smoke a great deal is unwarranted and may have been derived from old movies. Greenberg et al. (1980) observed that the average viewer had to watch television for 2 hours to observe someone smoke a cigar, cigarette, or pipe. Our pilot study found that only 11 percent of male and 2 percent of female major characters smoke in prime time. There is less smoking in situation comedies, more in crime and adventure programs, and the most in serious drama (including movies): 13 percent of men and 4 percent of women smoke.

There is no information on any characters refusing to smoke or expressing antismoking sentiments. Clearly, as we see below, the dramatic uses of smoking are more limited than those of drinking.

Patterns of Alcohol Use

Alcohol on television is hard to escape. Dillon (1975*a*, *b*, *c*) found it shown or mentioned in 80 percent of prime time programs (not counting commercials). Futch et al. (1980) observed it on 12 of the 15 "most popular prime time programs" analyzed. They noted an average of 2.1 drinking scenes and 4.8 verbal references per program. The mean duration of these scenes was 93 seconds, considerably longer than the mean duration of scenes where nonalcoholic beverages are consumed (40 seconds).

In a recent review of research on alcohol use on television, Greenberg et al. (1980) concluded:

> During no hour of the evening does the alcohol usage rate on fictional television series average less than 1½ acts per program hour. And during the later hours of prime-time—9-11 p.m.—no hour goes by with an average of less than three instances of usage. One can find no program type, save Saturday mornings, with less than one or two instances per hour, and the more heavily watched types of situation comedies and crime shows exceed four acts per hour during the most recent season analyzed. Conservatively, a youngster, too young to drink, will be exposed to 10 drinking acts on television during a day's viewing; perhaps it is excessive to indicate that this can be projected to more than 3,000 in a year's period (p. 145).

Nor is all this drinking a casual affair of a glass or two. Breed and DeFoe (1981) analyzed 233 scenes about alcohol in prime time drama and found that 40 percent were "heavy drinking" (five or more). An additional 18 percent involved chronic drinkers.

Garlington (1977) found the world of daytime serials even more saturated with alcohol. "The soap operas averaged almost three 1-minute intervals per 21-minute program during which an alcohol-related event occurred." This would amount to a rate of at least 6 per hour.

Breed and DeFoe (1981) found that alcoholic beverages not only outnumber other beverages consumed on television but that the pattern of drinking is virtually the inverse of the pattern in daily life. Alcohol drinking acts were more than twice as frequent as the second-ranking coffee and tea, 14 times as frequent as soft drinks, and more than 15 times as frequent as water. Of all identifiable alcoholic beverages, 52 percent were hard liquor, 22 percent were wine, and 16 percent were beer.

Who are the drinkers? The study of Greenberg et al. (1980) confines them to about 6 percent of the total television character population. Our analysis of prime time major characters found that 36 percent (39 percent of men and 32 percent of women) are drinking. The proportions go down slightly in situation comedies but rise in serious drama. In crime and adventure programs, the percentage of women drinkers (48 percent) is actually greater than that of men (41 percent). (It should be recalled, however, that men outnumber women at least 3 to 1, so the absolute number of female drinkers is still lower than that of male drinkers.)

> All in all, the drinkers in significant alcohol scenes occupy important places in the prime time world. Most drinkers are adult males—settled adult "good guys" with considerable rank, who play leading roles and are seen weekly by many millions

of viewers. Very few are "bad guys" or bit players (Breed and DeFoe 1981).

Characters seldom decline a drink or express disapproval of drinking. When they do, the disapproval tends to be mild, ineffective, and to come from women. It is also directed mostly at women and teenage drinkers. Breed and DeFoe (1981) also sum up the evidence on justifications:

> Heavy drinking was very seldom excused or rationalized in the dramas, but it often was—39 percent of the time—in the situation comedies. The chief mechanism was humor. The episode would end with the alcohol abuser suffering a hangover, while others (and sometimes the drinker) would deliver a joke or a series of jokes. In other cases, intoxication was excused by rationalizations, usually based on acute stress preceding the bout.

The most frequent reason given for drinking on television is a personal crisis, according to Breed and DeFoe. Drink was a means of dealing with crisis or tension in 61 percent of significant incidents. Leading guest actors in prime time series drank in a crisis 74 percent of the time. Lesser characters drank for social and other reasons. Only a few "bad" characters used alcohol to manipulate other people. Futch et al. (1980) found "stress reduction," hospitality, celebration, and just enjoyment the leading reasons given and observed no consistent behavioral consequences of alcohol use.

Breed and DeFoe's larger study, however, did find some consequences. They were "strained relationships" (in 43 percent of "significant incidents"), harm to self or other (19 percent), embarrassment or hangover (15 percent), and loss or threat of loss of job or status (8 percent).

The "harm to self or other" was mostly from accidents or fighting. Out of 18 drinking and driving episodes analyzed, 4 involved accidents, 5 near misses, and 9 were problem-free. Of the six "good" characters shown drinking and driving, only one met with an accident; the others were spared.

Our own results show that, although over one-third of all major characters are shown drinking, only about 1 percent are portrayed as having a drinking problem or being an alcoholic. At any rate, drinking on television is not only prevalent but also generally condoned and often part of the generalized "background" of a program. The portrayals certainly do not reflect the policy of sensitivity and caution demanded by the codes.

What Viewers Say and Do

Types of Associations With Viewing

As noted above, the principal characteristic of television that distinguishes it from other media is its relatively nonselective and ritualistic use by most viewers. Television presents a coherent world of drama, news, and commercials whose common patterns form the mainstream of the shared symbolic environment. Information embedded in its popular entertainment patterns reaches those who otherwise do not select out such information. Television is, therefore, the most pervasive source of information (of whatever quality) on health and other subjects prevalent in its programing.

It would be misleading, however, to attribute to television alone the amounts and types of information (or misinformation) held by its viewers. The situation is much more complex. We know that television tends to monopolize the cultural participation of the less educated, lower income groups. These are the groups also most deprived of reliable information about many subjects and the most mistrustful of and alienated from many other sources of information. A General Mills report (1979) shows that these groups have the poorest health and nutritional opportunities and are the most in need of valid information about health. The question is not whether television "causes" the vicious cycle of ignorance and poor health but whether it uses its vast and compelling power to perpetuate or to break it.

A further complication is that television viewing as a physical activity (or inactivity) has certain characteristics that may affect, or even counter, its content-related lessons. The relaxed ritual of viewing provides special occasions for resting, eating, smoking, and drinking. We do not know how the physical circumstances interact with the informational content. We do know that those who watch more television are more likely to be complacent about what they eat and drink, to smoke (despite the relatively low level of smoking on programs and the lack of tobacco commercials), and to drink no more than others (despite the abundance of alcohol consumption on television); but they also derive less satisfaction from health than those who spend less time watching. (These overall results will be examined in terms of important subgroup specifications and further elaborated in the next section.)

The General Mills study notes that a major factor underlying Americans' attitudes about health is "denial and unwillingness to believe that catastrophic illness could attack one's own immediate family." It is quite possible that spending a large amount of time "living" in the world of television, a world in which illness is rare, might help cultivate this denial.

Finally, an extremely high level of public confidence in doctors and the medical profession in general may be behind the "philosophy of denial" and the "live for today" attitudes the General Mills study found to be so widespread. The cultivation of the idea that doctors are omnipotent saviors may begin at an early age. Arenstein (1974) and McLaughlin (1975*a*) both report that young children who are heavy viewers of televison are more likely than lighter viewers to hold images of doctors and medical professionals that resemble television presentations. Even for adults, confidence in doctors is more likely to be found among heavy viewers (Gerbner et al. 1980*c*) and heavy viewers of doctor shows in particular (Volgy and Schwartz 1980). Television thus may also contribute to a syndrome in which high levels of confidence in the medical profession may justify "live for today" attitudes and lack of interest in preventive medicine; if a problem arises, a doctor can provide the cure.

Information and Attitudes

There are some indications that heavy exposure to television's portrayal of health matters may indeed contribute to the public's health-related knowledge and behaviors. It should be stressed that, although these findings are preliminary, they unquestionably affirm the idea that television has tremendous potential impact on health and that this problem merits concentrated and sustained research.

Among children, Leaman (1973) found that fourth and sixth graders who watch more television have lower levels of nutritional knowledge. Moreover, the nutritional value of the children's diets seemed to vary inversely with amount of viewing.

Other, more indirect, pieces of evidence suggest that unhealthy practices may accompany greater reliance upon television for health information. In the General Mills study (1979), respondents were given a list of 16 information sources (e.g., doctors, friends, families, television programs, popular books on health, etc.) and asked which were their "two or three main sources" of health information. "Television programs" were the second most-cited source (chosen by 31 percent), led only by "doctors and dentists" (chosen by 45 percent). All other sources were chosen by less than 30 percent of the sample.

More importantly, those who did choose television programs (versus those who did not) manifest a distinct profile. Table 1 shows that in most demographic groups (defined by sex, social class, and place of residence), those who chose television programs are significantly more likely to be categorized as "complacent" (versus "concerned") on health attitudes; as holding "old" (versus "new") health values; as being a "nonexerciser" on physical fitness; and as being "poorly informed" (versus "well" or "somewhat-informed") in terms of health information. The latter two—not exercising and being less informed—show particularly strong and consistent associations with choosing television, across subgroups.

These data cannot support the argument that television contributes to poor health routines and lack of awareness of health information (although they are consistent with such a notion). But they do suggest that those who credit television as a main source of information, even with other things held constant, are not among the more health-minded segments of the population.

Other surveys, which include a measure of amount of daily television viewing, echo these patterns and provide more hints about the possible consequences of television on health. A 1979 study conducted by the Roper Organization for Virginia Slims asked:

> Here are some statements different people have made about their weight and eating habits. Which one of these statements comes closest to being right about you:
>
> I'm not concerned about weight; I eat and drink whatever I want, whenever I want (31%).
> I'm not concerned about weight, but I'm a little careful about what I eat and drink (31%).
> I diet occasionally to keep myself trim (23%).
> I pretty much stay on a diet all the time (15%).

The first choice clearly represents the most complacent outlook on diet and nutrition. Our analyses lend support to the notion that television may cultivate this perspective. Those who watch more television are significantly more likely to select the first response (see table 2).

"Mainstreaming" Health Conceptions

While this association holds up within most subgroups, there are interesting exceptions. The baselines and the intensity of the relationship do show some fluctuation across a range of groups, much of which may be explained by a process we call "mainstreaming" (see Gerbner et al. 1980*b*). "Mainstreaming" implies that some differences deriving from other factors may be reduced or even eliminated among those who watch more television (heavy viewers).[3] Groups who share a relative commonality of outlooks cultivated by television (the "mainstream" view) will often show weak or no associations between amount of viewing and a given perspective. But strong relationships may be found for those groups whose lighter viewers do *not* share that outlook. Thus, cultivation may often imply a convergence into a more homogeneous "mainstream," rather than absolute, across-the-board increments.

Figure 1 presents a graphic illustration of the concept of "mainstreaming" in this context. The figure shows the relationship between amount of viewing and being particularly unconcerned about diet and nutrition, by respondents' income levels. We see that the association is

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[3] "Heavy," "medium," and "light" viewers represent relative rankings, according to the distribution of amount of viewing in a sample. In a report on health, it is worth noting that the term "heavy viewer" refers to the quantity of viewing and not to the quantity of the viewer.

Table 1

Health Values, Behaviors, and Information for Do and Do Not Select Television as One of Two or Three "Main Sources of Information," From a List of 16 Sources .

	% Who Are Complacent			% With Old Health Values			% Who Are Nonexercisers			% Who Are Poorly Informed			
	TV not Chosen	TV Chosen	gamma	TV not Chosen	TV Chosen	gamma	TV not Chosen	TV Chosen	gamma	TV not Chosen	TV Chosen	gamma	Base N (±5)
Social Class:													
Lower	63	70	.14	7	11	.24	62	60	−.04	24	48	.49***	(380)
Middle.	69	76	.17**	14	18	.14*	55	73	.38***	18	29	.30***	(1207)
Upper	70	80	.27**	7	14	.34**	50	60	.21**	13	24	.36***	(539)
Residence:													
Central City . . .	70	72	.04	10	30	.57***	60	68	.18*	22	43	.46***	(704)
Urban	68	77	.22***	15	16	.02	54	65	.22***	16	26	.28***	(978)
Rural	66	76	.22**	8	4	−.37*	56	73	.36***	13	21	.30***	(702)
Sex:													
Male	73	72	−.04	13	20	.24***	51	69	.36***	23	33	.25***	(1026)
Female	64	78	.32***	11	13	.12	60	68	.16***	13	26	.42***	(1359)

* $p<.05$.

** $p<.01$.

*** $p<.001$.

Data Source: General Mills/Yankelovich, Skelley, and White 1979.

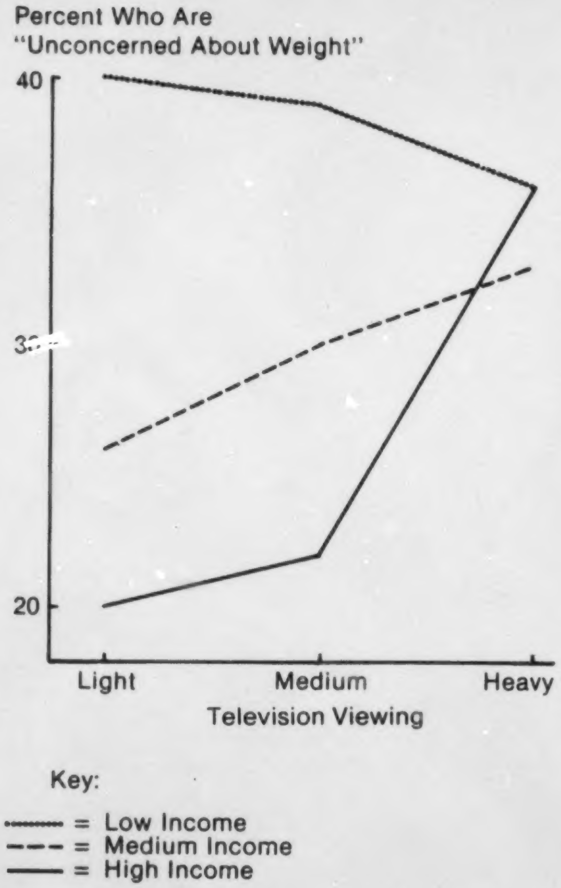

Figure 1. Illustration of "mainstreaming": association between amount of viewing and nutritional complacency, by income level.

essentially zero for low-income respondents; if anything, they show a slight *negative* relationship. In other words, within the most complacent (i.e., low) income group, television may be associated with greater awareness.

Light viewers with middle or high incomes are relatively less likely to be complacent about their eating habits, yet we find strong relationships with complacency within the higher income groups. Clearly, heavy viewing goes with a more homogeneous "mainstream" of relatively strong nutritional complacency. While a group with divergent views (i.e., low income) may even show a slight negative relationship, the overall result is a diminution of other differences among heavy viewers. The "farther" away from the mainstream, the stronger the cultivation.

The data for a number of other key subgroups are shown in table 3 (Virginia Slims 1979). A similar mainstreaming pattern is evident for different age groups. There is virtually no relationship between amount of viewing and being unconcerned about diet and nutrition for older people; yet, older people are more likely to be unconcerned regardless of viewing; they are already "in" the mainstream. Younger and middle-age respondents, on the other hand, show evidence of the cultivation of nutritional complacency. Again, the farther away from the mainstream, the stronger the cultivation.

While mainstreaming may explain these specifications, it is worth noting that the relationship does remain fairly consistent across most other subgroups. Thus, television may cultivate a general neglect of good eating habits and healthy outlooks for most groups. Groups who are more likely to be complacent regardless of amount of viewing are joined by the heavy viewers of other subgroups in their relatively complacent television mainstream perspective.

We mentioned above that the act of watching television per se, as opposed to exposure to the lessons embedded in its content, may have implications for viewers' health. One thing viewers do while watching is eat. Our study of adolescents[4] found that about 83 percent say they "usually eat" while watching television. The tendency to eat while viewing increases as adolescents mature: 74 percent of sixth graders, 82 percent of seventh graders, 84 percent of eighth graders, and 91 percent of tenth graders say they eat while watching television.

An equally plausible accompaniment of the physical act of watching television is smoking. Preliminary analyses of the 1977 and 1978 National Opinion Research Center (NORC) General Social Surveys show that smokers—especially cigarette smokers—report watching significantly more television. Nonsmokers average 2.65 hours of viewing a day ($N=1802$), while cigarette smokers average 3.01 hours a day ($N=1128$; $p<.001$). Table 4 shows the percentage of light, medium, and heavy viewers who smoke, overall and within key subgroups. We see that the positive association between smoking and amount of viewing holds for almost all groups, with two exceptions: nonwhites and those whose self-reported current health is only "fair" or "poor."

The second exception is particularly intriguing and consistent with mainstreaming. Among light viewers, those who say they are in "excellent" or "good" health are less likely to smoke than those in worse health, by 12 points. But the heavy viewers of these groups differ by only 1 point. In fact, the relationship is somewhat negative for those in the worst health—whose light viewers are extremely likely to be smokers.

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[4] This sample consists of 649 sixth through ninth graders attending a public school in suburban/rural New Jersey. Details of the sample's characteristics can be found in Morgan and Gross (1980).

Table 2

Relationship Between Amount of Television Viewing and Nutritional Complacency

	Total		Television Viewing					
			Light		Medium		Heavy	
	%	N	%	N	%	N	%	N
I'm not concerned about weight, I eat whatever I want, whenever I want	31	(1142)	28	(284)	31	(510)	35	(348)
I'm not concerned about weight, but I'm a little careful about what I eat and drink	31	(1132)	33	(335)	30	(489)	31	(308)
I diet occasionally to keep myself trim	23	(842)	24	(242)	25	(408)	20	(192)
I pretty much stay on a diet all the time ...	15	(535)	16	(166)	14	(234)	14	(135)
Total	100	(3651)	100	(1027)	100	(1641)	100	(983)

X^2=21.42, d.f.=6, p=.001, gamma=−.07, p=.001 (tau).

Data Source: Virginia Slims/The Roper Organization 1979.

Table 3

Relationship Between Amount of Television Viewing and Nutritional Complacency[1]

	Television Viewing										
	Total		Light		Medium		Heavy				
	%	N	%	N	%	N	%	N	CD[2]	Gamma	Base N
Overall	31	(1142)	28	(284)	31	(510)	35	(348)	+ 7	−.11***	(3651)
Controlling for:											
Sex:											
Male	47	(429)	41	(120)	49	(205)	51	(104)	+10	.13**	(918)
Female	26	(713)	22	(164)	25	(305)	31	(244)	+ 9	.14***	(2733)
Age:											
18–29	33	(357)	28	(86)	32	(151)	40	(120)	+12	.17***	(1085)
30–49	30	(357)	24	(94)	31	(173)	36	(90)	+12	.18***	(1203)
Over 50	31	(428)	33	(104)	30	(186)	32	(138)	− 1	.00	(1363)
Income:											
Under $10,000 ...	38	(313)	40	(62)	39	(126)	36	(125)	− 4	−.05	(826)
$10-25,000	30	(472)	26	(116)	30	(227)	33	(129)	+ 7	.10*	(1575)
Over $25,000	23	(152)	20	(52)	22	(67)	36	(33)	+16	.20**	(667)
Education:											
No College	35	(832)	33	(176)	35	(374)	37	(282)	+ 4	.06*	(2369)
Some College	24	(306)	22	(108)	24	(134)	29	(64)	+ 7	.09*	(1273)
Race:											
White	30	(957)	27	(257)	29	(428)	33	(272)	+ 6	.09**	(3206)
Nonwhite	42	(175)	36	(24)	40	(76)	48	(75)	+12	.15*	(413)

* $p<.05$.
** $p<.01$.
*** $p<.001$.

Data Source: Virginia Slims/The Roper Organization 1979.

[1] Dichotomized as "I eat whatever I want, whenever I want" vs. all other responses (see table 2).

[2] CD=Cultivation Differential; % heavy viewers who are complacent minus % light viewers who are complacent.

Table 4

Percent of Light, Medium, and Heavy Television Viewers Who Smoke

	Television Viewing										
	Total		Light		Medium		Heavy				
	%	N	%	N	%	N	%	N	CD[1]	Gamma	Base N
Overall	41	(1248)	38	(297)	39	(546)	47	(405)	+ 9	.12***	(3050)
Controlling for:											
Sex:											
Male	49	(650)	44	(172)	48	(305)	57	(173)	+13	.15***	(1332)
Female	35	(598)	32	(125)	32	(241)	41	(232)	+10	.15***	(1718)
Education:											
No College	44	(912)	42	(183)	41	(389)	49	(340)	+ 7	.10**	(2083)
Some College	35	(331)	33	(113)	35	(154)	40	(64)	+ 7	.09	(2756)
Race:											
White	41	(1108)	38	(271)	39	(486)	49	(351)	+11	.14***	(2687)
Nonwhite	40	(131)	37	(22)	42	(56)	38	(53)	+ 1	.00	(332)
Income:											
Under $10,000	40	(411)	40	(88)	35	(150)	45	(173)	+ 5	.10*	(1030)
$10–20,000	45	(450)	39	(104)	44	(206)	52	(140)	+13	.15***	(1005)
Over $20,000	38	(333)	34	(93)	39	(169)	46	(71)	+12	.14**	(869)
Present Health:											
Excellent/Good	42	(459)	40	(119)	38	(196)	49	(144)	+ 9	.11*	(1107)
Fair/Poor	45	(186)	52	(44)	39	(67)	48	(75)	− 3	−.01	(414)
Age:											
18–29	44	(343)	39	(66)	41	(139)	51	(138)	+12	.16**	(775)
30–64	44	(784)	40	(210)	43	(366)	53	(208)	+13	.15***	(1780)
Over 65	24	(116)	21	(18)	21	(40)	29	(58)	+ 8	.18*	(481)

* $p < .05$.
** $p < .01$.
*** $p < .001$.
Data Source: NORC General Social Surveys 1977 and 1978.
[1] CD = Cultivation Differential; % heavy viewers who smoke minus % light viewers who smoke.

Table 5 shows that the positive association between smoking and amount of viewing holds up when simultaneous controls are applied. It also shows that there is a simple negative association between viewing and drinking alcoholic beverages—overall, heavy viewers are less likely to consume alcohol—but this disappears under multiple controls.

Still, as seen in table 6, there are some intriguing subgroup differences, most of which are consistent with the notion of mainstreaming. For example, those with some college education are more likely to drink; comparing those who have and have not attended college, we see that light viewers differ by 24 percentage points, while heavy viewers differ by 14. Whites are more likely to drink than nonwhites; but a 28-point difference between white and nonwhite light viewers is reduced to a 10-point difference among heavy viewers. Finally, those in better health are more likely to drink; but a 25-point difference between light viewers in better versus worse health is only 11 points among the heavy viewers.

Thus, even though the overall association between amount of viewing and the tendency to consume alcohol is zero under simultaneous controls, there are a number of subgroup differences; the relationship may be positive for one subgroup yet negative for another. In these cases, we again see that television may be "absorbing" viewers of "otherwise" divergent behaviors and outlooks into its "mainstream."

The consequences of these patterns on viewers' actual state of health are difficult to determine, particularly with cross-sectional data. A partial explanation is that people in worse health simply watch more television. Indeed they do; but these data also suggest that television can help perpetuate unhealthy beliefs, values, and lifestyles.

Table 5

Partial Correlations Between Amount of Television Viewing and Smoking and Drinking

	Smoking[1]	Drinking[1]
Simple Correlation	.09***	−.07***
Controlling for:		
Sex	.10***	−.05***
Age	.09***	−.07***
Education	.08***	−.02
Income	.09***	−.02
Occupational Prestige	.08***	−.05**
Race	.09***	−.06***
All Controls	.09***	.00
Final *d.f.*	(2806)	(2804)

[1] 1=yes, 0=no.

** $p<.01$.

*** $p<.001$.

Data Source: NORC General Social Surveys 1977 and 1978.

Heavy viewers are significantly *less* likely to derive a "great deal" or a "very great deal" of satisfaction from their health (see table 7). This relationship essentially holds in all groups. Although it is reduced, it even holds when controlling for respondents' current state of health.

To conclude, television viewing is deeply integrated into different styles of life, with powerful implications for health practices. A variety of findings, though preliminary and often indirect, lend credence to the notion that television may have a considerable impact upon the public's images, knowledge, and behaviors. Television programs are a frequently cited source of health information; those who choose them, and/or heavier viewers, seem relatively neglectful and complacent about their physical well-being and are less informed about health and exercise less. Heavy viewing also goes with getting less satisfaction from one's health. In addition, the very act of watching television may generate behaviors and habits with clear health implications in the areas of smoking, eating, and drinking.

Table 6

Percent of Light, Medium, and Heavy Television Viewers Who Drink Alcoholic Beverages

	Television Viewing										
	Total		Light		Medium		Heavy				
	%	N	%	N	%	N	%	N	CD[1]	Gamma	Base N
Overall	72	(2202)	73	(577)	74	(1036)	68	(589)	− 5	−.08**	(3049)
Controlling for:											
Sex:											
Male	79	(1053)	80	(311)	80	(511)	76	(231)	− 4	−.06	(1330)
Female	67	(1149)	67	(266)	69	(525)	64	(358)	− 3	−.05	(1719)
Education:											
No College	67	(1403)	63	(276)	70	(667)	66	(460)	+ 3	+.01	(2083)
Some College	83	(795)	87	(300)	83	(367)	80	(128)	− 7	−.15*	(953)
Race:											
White	74	(1985)	76	(538)	75	(945)	70	(502)	− 6	−.09**	(2685)
Nonwhite	58	(193)	48	(29)	60	(81)	60	(83)	+12	+.11	(333)
Income:											
Under $10,000	60	(619)	59	(130)	63	(270)	57	(219)	− 2	−.05	(1031)
$10-20,000	78	(780)	76	(200)	78	(368)	79	(212)	+ 3	+.04	(1003)
Over $20,000	85	(734)	84	(232)	85	(371)	84	(131)	0	+.01	(869)
Present Health:											
Excellent/Good	77	(854)	79	(235)	79	(409)	72	(210)	− 7	−.13*	(1107)
Fair/Poor	59	(243)	54	(46)	58	(102)	61	(95)	+ 7	+.09	(415)
Age:											
18–29	80	(623)	85	(142)	83	(280)	75	(201)	−10	−.21**	(775)
30–64	75	(1333)	75	(394)	76	(652)	73	(287)	− 2	−.03	(1779)
Over 65	49	(236)	40	(35)	52	(101)	51	(100)	+11	.09	(481)

* $p<.05$.

** $p<.01$.

Data Source: NORC General Social Surveys 1977 and 1978.

[1] CD=Cultivation Differential; % heavy viewers who drink alcoholic beverages minus % light viewers who drink alcoholic beverages.

Table 7

Percent of Respondents Reporting That They Derive a "Very Great Deal" or a "Great Deal" of Satisfaction From Their Health, by Television Viewing

	Television Viewing										
	Total		Light		Medium		Heavy				
	%	N	%	N	%	N	%	N	CD[1]	Gamma	Base N
Overall	60	(2712)	66	(719)	61	(1267)	54	(724)	−12	−.15***	(4519)
Controlling for:											
Sex:											
Male	64	(1264)	68	(367)	65	(618)	57	(279)	−11	−.15***	(1992)
Female	57	(1448)	64	(352)	58	(651)	52	(445)	−12	−.14***	(2527)
Education:											
No College	57	(1773)	61	(372)	59	(822)	53	(579)	− 9	−.11***	(3107)
Some College	67	(935)	72	(345)	66	(447)	59	(143)	−13	−.16***	(1396)
Race:											
White	61	(2415)	67	(661)	62	(1153)	53	(601)	−14	−.16***	(3994)
Nonwhite	57	(277)	60	(50)	57	(108)	55	(119)	− 5	−.07	(490)
Income:											
Under $10,000	51	(836)	57	(189)	52	(347)	47	(300)	−10	−.11***	(1647)
$10–20,000	66	(1014)	71	(265)	66	(493)	61	(256)	−10	−.12***	(1543)
Over $20,000	68	(776)	71	(248)	67	(389)	64	(139)	− 7	−.09*	(1144)
Present Health:											
Excellent/Good	76	(1658)	77	(417)	78	(807)	73	(434)	− 4	−.08*	(2170)
Fair/Poor	19	(154)	21	(31)	18	(62)	18	(61)	− 3	−.10*	(826)
Age:											
18–29	67	(791)	78	(192)	64	(323)	65	(276)	−13	−.13**	(1174)
30–64	61	(1585)	66	(461)	63	(795)	52	(329)	−14	−.17***	(2597)
Over 65	44	(322)	44	(59)	48	(147)	40	(116)	− 4	−.05	(730)

* $p<.05$.
** $p<.01$.
*** $p<.001$.
Data Source: NORC General Social Surveys 1975, 1977, 1978.
[1] CD=Cultivation Differential; % heavy viewers minus % light viewers.

A complex but fairly consistent pattern found in these studies is that respondents in "otherwise" divergent subgroups respond similarly if they are heavy viewers. Many of the exceptions and specifications in these data can be explained by a convergence into a more common, shared, homogeneous "mainstream" of beliefs, values, and actions about health.

With regard to health-related program and commercial content, only in the portrayals of illness, doctors, nutrition, obesity, driving safety, smoking, and drinking is there enough research evidence to report with some degree of confidence. Most of it reveals a serious conflict with realistic guidelines for health and medicine. Research on the contributions of these portrayals to specific conceptions of health and medicine is scarce. But the pattern of findings, including our own pilot study, indicates that television viewing is associated with a convergence of the heavier viewers upon paradoxical and disjointed "mainstream" conceptions and practices. Characteristic features are poor nutritional knowledge and behavior, general complacency about health, and high confidence in the medical community.

The cultivation of ignorance and neglect, especially among the otherwise relatively enlightened viewers, coupled with an unrealistic belief in the magic of medicine, is likely to perpetuate unhealthy lifestyles, hurt patients and health professionals, and frustrate efforts at health education. If culturally sustained health hazards are the new frontier in health promotion and disease prevention, there is a need for greater mobilization of effort and resources in a central sector of that frontier. The first step toward such mobilization is the fuller, broader, and more sustained study of the messages television conveys about health and a refinement of their contributions to health conceptions and behaviors of various groups of viewers.

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Health Campaigns on Television

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There has been longstanding, persistent interest in the United States and several other countries in the use of mass media campaigns,[1] particularly through television, to encourage changes in society. This interest has been accompanied by an equally persistent debate on the efficacy of campaigns in producing meaningful effects on knowledge, attitudes, and behavior. Despite this debate, there is a growing interest, particularly in the health field, in the use of the mass media to influence health behavior. A recent report of the Surgeon General on health promotion and disease prevention (*Healthy People* 1979) proposes six key areas of health-behavior modifications that are within the grasp of the average American, and, if undertaken, would have a substantial effect on morbidity and mortality. These areas include smoking cessation, reduction of alcohol misuse, dietary changes, increased physical activity, periodic screening for major disorders, and adherence to speed laws and use of seatbelts. All of these areas have been subject to recent experimentation using mass media campaigns. The results have mainly been positive and have spawned several more studies.

The debate is far from over. It seems to be shifting, however, from a simple-minded dichotomy of good or bad campaigns to a more sophisticated analysis of situational factors and specific campaign design features that may lead to success.

There are two problems in presenting a state-of-the-art review of the role of television in health. The first problem is in distinguishing between television campaigns and campaigns in general. Commercial television is a low information density medium; it is not used to provide a great deal of detailed information. Detailed information, particularly about health matters, is generally found in print media. Therefore, most campaigns in the commercial sector, as well as in public health areas, use a combination of media to achieve their objectives.

The second problem is in regard to the quality of the literature itself. There is no doubt that the mass media are highly influential in many aspects of our lives (Roberts and Bachen 1981). They help shape us in what to think about, the so-called "agenda-setting" function of the media (McCombs and Shaw 1972); and to a lesser extent they also teach us what we do think about (Chu and Schramm 1967). To some degree, people seek health information from the media (Wade and Schramm 1969; Williams et al. 1977). Additionally, there is probably a great deal of health-related learning and attitude change resulting from exposure to advertising purposely designed to affect us, as well as incidental learning from television material (Atkin 1978; Roberts et al. 1979). However, much of the information relating to health matters may be inaccurate, produce negative boomerang effects, and/or be potentially damaging to individuals.

Purposive public health campaigns and/or experiments have been conducted in a wide variety of health-related matters including, to cite only a few areas and examples, community mental health (Schanie and Sundel 1978); drug abuse (Hanneman et al. 1973; Feingold and Knapp 1977; Atkin 1978; Hanneman 1973; Milavsky et al. 1975); smoking (McAlister et al. 1980; Puska and Neittaanmaki 1980; O'Keefe 1971) seatbelt wearing (Robertson et al. 1974; NHTSA undated); dental health (Evans et al. 1970); nutrition (Lemnitzer et al. 1979; Roberts et al. 1979; Stern et al. 1976); cancer (Kegeles 1969; Butler-Paisley 1975); venereal disease (Rosenblatt and Kabasakalian 1966); and alcoholism (Blane 1976; Blane and Hewitt 1977; Hochheimer 1980).

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[1] Rogers (1973) defines a campaign as ". . .a preplanned set of communication activities designed by change agents to achieve certain changes in receiver behavior in a specified time period."

While the literature on the effects of mass media in general is encouraging, taken as a whole, the body of knowledge in the potential of mass media campaigns for health and the proper conduct of such efforts is sorely lacking. For example, in the area of the alteration of alcohol consumption patterns, a review by Blane (1976) concludes: "Research evidence is almost totally lacking; all that exists are bits and pieces of information that are no more than suggestive." Clarke and Kline (1974) aptly summarize the literature on the effects of the mass media:

> Two decades of null findings . . . had threatened to drown confidence in the power of mass communications under a sea of references to "reinforcement" and "selective exposure". . . . It may be that conventional variables and sterile research designs have a great deal to do with widespread doubts about the effectiveness of media in society.

Research, not despair, is called for in such a situation. Fortunately, in recent years, several mass media-based campaigns have shown promising results owing in part to an understanding of the historical development of theory and practice in past social campaigns. This review is based on the assumption, supported by many studies, that the mass media have great educational potential and will focus on three areas essential for progress in the field. The first area is an understanding and appreciation of the past theory in the design of social campaigns; the second area is a brief review of past successes and failures noting probable reasons for these outcomes; the third area is a synthesis based on the literature summarizing the areas for sensitivity, attention, and research in the design and implementation of future health campaigns.

A Review of the Reviews: Campaigns in General

Eight influential reviews of the literature exist on the efficacy of communication campaigns in general. They span over 30 years and are listed chronologically in order to present the historical flow of theories, opinions, and analyses over time.

Hyman and Sheatsley

Based on a large body of experience in studying campaigns and researching their effects, Hyman and Sheatsley (1947) wrote one of the earliest articles specifically dealing with "some reasons why information campaigns fail." They assert the hypothesis that there are many psychological barriers to the free flow of ideas which they illustrate, using data from several opinion research studies. They reject what they term the "naive view" that increasing the flow of information necessarily increases the absorption of that information; they focus on the "psychological characteristics of human beings." To explain the failure of campaigns, they propose five generalizations which they illustrate with their research.

1. There exists a hard core of chronic "know nothings." This generalization asserts that there is something about the uninformed which makes them harder to reach, regardless of the type of information being communicated.
2. Interested people acquire the most information. This is based on the observation that people with prior interest in some topic will probably be more interested in additional information on that subject than those who have no interest in the matter. Hyman and Sheatsley suggest studying why people are or are not interested in some kind of information before undertaking any campaign.
3. People seek information congenial to prior attitudes. This is the often cited area of selective exposure to information based on prior attitudes. Sears and Freedman (1967) discuss this subject at great length in their classic paper, and while they show a body of literature supporting de facto selectivity, the literature in regard to selection in accordance with prior attitudes is nowhere as conclusive as many people even today believe it to be.
4. People interpret the same information differently. There is ample evidence that perception of events and information varies across people.
5. Information does not necessarily change attitudes. They strongly assert that it is wrong for information campaigners to assume that information alone will change attitudes.

Hyman and Sheatsley's article is best viewed as a reaction against the overly optimistic information campaigns of their time which were dependent on the "hypodermic or bullet" model of communication. This model assumed direct and immediate effects of mass communication (Schramm 1971). While their assertions are not empirically verified by their data, many of them are often quite heuristically useful, even in the light of current communication research evidence.

Lazarsfeld and Merton

Lazarsfeld and Merton (1971, paper first published in 1948) also present a somewhat pessimistic view of the power of mass media campaigns. In fact, Schramm and Roberts (1971) describe the article as ". . . perhaps the most sophisticated statement of the point of view that the chief social effect of the mass media is no change." Unlike Hyman and Sheatsley, they move from a focus on the receiver as the important link in campaign success to that of the message and the communication system itself. They present what they consider to be the chief social functions of the mass media: the status-conferral function, the enforcement rather than the change of social norms, the narcotizing dysfunction (a paralyzing rather than motivating effect of media exposure), and social conformism from the media owing to their ownership structure and investment in the status quo. Their paper remains to this day an insightful philosophical statement. To allay fears of the potential of the media for propaganda, they discuss three necessary conditions, based on research evidence, that are needed for effective propaganda: (1) monopolization (i.e., lack of counterpropaganda); (2) canalization (i.e., moving existing attitudes into action); (3) supplementation (i.e., supplementing mass media with interpersonal communication and influence). Lazarsfeld and Merton conclude that, without several interacting preconditions, successful behavior change as a result of a mass media campaign is unlikely.

Cartwright

Cartwright (1971, paper first published in 1949) presents a somewhat neutral position but one with optimistic and practical implications for action. In fact, the current Stanford Heart Disease Prevention Program is designed, in part, around this model of mass communication. Although he anchors his measures of campaign progress on the individual's cognitive, motivational, and behavioral structure, his area of concern is broader than just that of the individual. He is concerned with the interacting roles of the individual, the message system, and the action environment. He cites evidence from the War Bond campaigns that the power of the media was not great, apart from the effects of other courses of influence. He outlines three stages that a campaign must go through to influence behavior:

1. Creating a particular cognitive structure;
2. Creating a particular motivational structure;
3. Creating a particular behavioral structure.

Cartwright is one of the few theorists who includes the importance of combining interpersonal communication channels with a mass media campaign to maximize behavior change. Cartwright makes a powerful argument for his particular way of looking at and designing campaigns. He readily admits that these are merely guidelines for campaigns and do not clearly outline the creative aspects of campaign development; however, he believes that they provide a "list of essential requirements for the success of any campaign of mass persuasion." He believes that the road to campaign success is not an easy one and large-scale behavior change is unlikely unless there are multiple influences exerted on a person to act in some particular direction.

Wiebe

Wiebe (1951–52) is well known for his posing of the question: "Why can't you sell brotherhood and rational thinking like you sell soap?" Although his article has been cited by some as the most enthusiastic statement of the power of the media in creating social change, in reality it is a cautious but optimistic statement of the differences between advertising for product sales and mass communication for behavior change. His focus is on the receiver and the message existing within a larger complex system that facilitates or impedes the behaviors the campaign is promoting. He attempts to outline the basic conditions for selling commodities and for success in mass persuasion:

1. The force (a combination of one's predisposition toward a goal advocated in the media and the motivation provided by the message iteself);
2. The direction (communicating to motivated persons in the message specifically where and how to easily consummate their motivation);
3. The mechanism (the social mechanism—such as the health clinic system—that facilitates the behavior);
4. The adequacy and compatibility (whether this mechanism can and/or is inclined to facilitate the behavior);
5. The distance (the perceived physical, emotional, and financial distance from the person to the mechanism that impedes or facilitates the given behavior).

Wiebe concludes that radio and television can "sell" social objectives within the constraints of the existence of these five factors. He cautions, however, that expectations of success should be about the same for the social programer as those of a commercial sponsor selling a relatively noncontroversial and easily obtainable product.

Griffiths and Knutson

Another somewhat neutral viewpoint is offered by Griffiths and Knutson (1960). They are concerned with the importance of receiver variables as well as the message and the influence of the social system in campaigns specifically for public health. They cite a variety of evidence and conclude that:

1. Mass media have a selective reach; there is evidence of selective exposure (citing Klapper 1960).
2. Specific and limited effects are all that can be hoped for from media (citing Hovland 1954; Greenberg et al. 1953).
3. The use of personal appeals and credible sources are important (they cautiously cite Merton's analysis [1946] of Kate Smith's bond campaign).
4. Informal leaders and the two-step flow are important (citing Katz and Lazarsfeld 1955).

Mendelsohn

Mendelsohn's (1973) sequel to Hyman and Sheatsley's article of 26 years earlier is a reaction to the popular notion that "audience apathy" is to blame when an information campaign fails. In his article, "Some Reasons

Why Information Campaigns Can Succeed," Mendelsohn switches the focus from the receiver of the communication to that of the message and the campaign design itself. He also moves toward optimism when he asserts that evaluations of past media efforts have often been concerned with what media cannot do rather than what they can. He departs from the mainstream also when he states that most published research is a result of post hoc evaluation efforts and that it is essential for creators of messages and for researchers to unite in message production and evaluation. Another important point is his statement: "In short, very little of our mass communications research has really tested the effectiveness of the application of empirically grounded mass communications principles simply because most communications practitioners do not consciously utilize these principles." He poses the important question, which is still in the process of being answered: "What if information campaigns were designed to reflect empirically grounded mass communications orientations and principles?" He uses some of his own professional experiences to illustrate what he asserts are empirically grounded generalizations:

1. Information campaigns should be planned with the assumption that the audience will be only mildly or not at all interested in the messages.
2. Middle-range goals can be reasonably achieved and environmental support systems should be used to help "sheer information-giving become effective in influencing behavior."
3. Campaigns can be successful if these middle-range goals are combined with attention paid to delineating specific targets in terms of demographic and psychological variables, lifestyle, value and belief system, and media habits attributes.

In another article, written specifically for communicators in the health field, Mendelsohn (1968) decries the sorry state of communication and public information regarding health. He cites a finding of the "CBS National Health Test" that three-quarters of the American public do not know what the normal human body temperature is. Mendelsohn says that we must turn from the "hypodermic needle model" of communication, which some public health educators still cling to, and move to what he terms "an aerosol spray model," where as you spray the messages on the surface some hit the target, most drift away, and very few penetrate. He makes a plea for moving away from defining public health communication as merely information transfer to persuasion with distinctive attitudinal and/or behavior change goals. He believes that most of the mass education in public health ". . . is more often designed to please the whims of some well-meaning board members than it is to accomplish meaningful effects. Most of it comes from the fertile imaginations of sincere but totally unprofessional weekend sloganeers." He advocates sound scientific rationales, careful pre-testing, and objective systematic evaluation.

Kotler and Zaltman

Kotler and Zaltman (1971) bring a different optimistic perspective to the problem of developing useful mass communication programs for social objectives, an area they term "social marketing." They define social marketing as ". . . the design, implementation, and control of programs calculated to influence the acceptability of social ideas and involving considerations of product planning, pricing, communication, distribution, and marketing research." They differentiate between social advertising, a much narrower area based on using only the media to promote a product, service, or practice, from the social-marketing approach, which draws upon the entire technology and past experience of marketing. They believe that the fault of past social campaigns was to assign advertising the primary, if not the exclusive, role in achieving its aims. This approach ignores the other components (the product, pricing, and distribution) of the marketing mix. They advocate a systems viewpoint in the promotion of social campaigns to the point of developing and pre-testing campaigns and approaches based not on any predetermined product or system but rather on a generic concept that is desired to be promoted (i.e., selling dental health in some empirically designable way, not selling toothbrushing). This generic concept serves as the overall objective for a given campaign and allows a maximum degree of flexibility in designing the optimal program including the most desirable product and related marketing model components. This generic problem definition has been quite successful in the private sector. Kotler and Zaltman differentiate selling social causes from selling typical products and admit that in the former it is generally much more difficult to achieve success. Social marketing typically has to work with deeply held beliefs and values, whereas for-profit marketers often deal with superficial preferences and choice situations. Social marketers often have difficulty in finding meaningful benefits to promote and usually have to deal with weak and/or uncooperative distribution systems. In addition, social marketing is often resented, while commercial marketing is taken for granted. They summarize their sales pitch for the marketing approach with the generalization that the social-marketing approach is useful because it represents a bridging mechanism linking the behavioral scientist's knowledge of human behavior with a well-developed planning and implementation system.

Atkin

Atkin (1979) provides a fairly comprehensive review of research evidence on the use of mass media in health campaigns. Reviewing dozens of studies in areas of health ranging from heart disease prevention to venereal disease and seatbelt wearing, he presents a somewhat cautious statement on the relative efficacy of the mass media.

Atkin briefly discusses two important considerations: What constitutes success for a campaign, and the role of pretesting. He cites evidence for much greater campaign effectiveness at the cognitive rather than attitudinal level, and much less impact still at the behavioral level. He concludes that planning intermediate or secondary goals might be more appropriate than hoping for behavioral outcomes. However, this perspective is unlikely to be persuasive with public health and associated funding agencies. The question, though, of how to define expectations of success does require further consideration by others in the health education field. Finally, his emphasis on the importance of pre-campaign audience analysis and pilot testing is relevant, based on evidence he cites of the impact of campaigns being dependent on the interpretation of the messages by the audience. Atkin concludes that "the basic tenor of the findings is positive; the use of mass media campaigns can produce modest influence on the health orientations of the audience."

Summary

The past 30 years' worth of reviews of communication campaigns has witnessed a swinging pendulum phenomenon. The initial articles were highly pessimistic, either blaming the receiver for the failure of campaigns or blaming the message and communication channels. They emphasized a core assumption of direct, immediate communication effects. Later articles (Griffiths and Knutson 1960; Cartwright 1971; Wiebe 1951-52) became somewhat more neutral to optimistic and tended to extend their focus to a concern with more than just source, message, channel, and receiver. These reviews tended to stress the importance of the social and behavioral systems on influencing individual behavior. More recent articles (Kotler and Zaltman 1971; Mendelsohn 1973) are markedly more optimistic. The most recent review by Atkin (1979) is much less optimistic than the others, perhaps marking a swing of the pendulum back toward expectations of limited success for campaigns and outcomes which are less direct and immediate than may be desired by health planners. This change in orientation is consistent with a shift in the field of communication from linear, causal thinking to nonlinear, indirect effects models (cf. Berlo 1977).

Taken as a whole, the similarities are much greater than the differences between the reviews. From the point of view of a campaign planner seeking direction, they all seem quite superficial. There is a great deal of discussion of successful and unsuccessful campaigns without a meaningful definition of success. There is little or no notion of segmentation of the audience to identify key target groups to be addressed by specific subcomponents of the overall campaign. With few exceptions, the articles lack an appreciation for a campaign as a complex, integrated system of interacting elements including both message, receiver, and skills-training and social-support factors which need to be carefully studied, planned, and evaluated.

Influential Communication Campaigns

Failures

Several campaigns have been cited as evidence that communication campaigns are doomed to failure. Four of the most influential, three of which concern public health, are discussed here. The emphasis is a critical perspective on the methodology used in the studies which led to null effects outcomes. It should be noted that a somewhat restricted definition of "campaign" is being used here. Other than the Star and Hughes study (1950) included for historical reasons, short-term efforts, such as the television show *V.D. Blues* and the month-long Toledo and Flint Study (Kline et al. 1974), which emphasized the influence of the social system on campaign effects, are discussed. In addition, since most health planners are mainly interested in changing health-related behaviors as ultimate outcomes of campaigns, campaigns planning such changes are featured here.

Star and Hughes, the Cincinnati Plan. The famous Cincinnati plan for the United Nations (Star and Hughes 1950) is often cited as evidence for the lack of power of the media and for evidence of selective exposure to consonant information. A close investigation of the study itself points out several key faults. Although in the introduction to the study, Star and Hughes clearly state that the project was conceived as ". . . aiming not at the influencing of opinion but rather at a presentation of facts . . . ," they primarily measure ". . . changes in interest, information and opinion . . ." attributable to the campaign. For the most part, they found no effect attri-

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butable to the campaign. On their most crucial measure, the number of people exposed to the messages, they had no premeasure; therefore, they could not attribute any changes in attitude to the campaign since they had no adequate control group. Without exploring any alternative rival hypotheses for the apparent selectivity of exposure of those initially most knowledgable on the UN, they propose previous psychological orientations as the sole predictor. Although the design had a lack of control and a statistically unsophisticated analysis, they flatly state that "The Cincinnati experiment has proved that the creating of interest is the first measure in building public opinion and that only after that will information be absorbed." No mention is made at all in their article of their message except to state the campaign slogan, as if all messages would be equally effective. This lack of emphasis on the message will also be seen in other campaigns that apparently failed.

O'Keefe, Smoking. Another study that has been widely cited as evidence that mass media campaigns have relatively small effects is the study of antismoking commercials by O'Keefe (1971). He presents his study as evidence that "attitudes are stubborn things, subject to modification only infrequently." The study basically was conducted by asking smokers and nonsmokers whether or not antismoking commercials were effective. While admitting in a footnote that his methodology was not entirely appropriate to test his stated hypotheses and that a controlled field study would have been preferable, he states, "The findings point to two important conclusions. The first supports the principle that mass communications, including those presented on television, are greatly limited in their ability to affect behavior . . ."—certainly a strong conclusion based upon his methodology and design.

Udry, Family Planning. A more recent study by Udry et al. (1972, 1974) examines the influence of a 6-month $330,000 media advertising campaign (simulating a $27-million saturation campaign in four cities) on contraceptive use and birth rates. Control cities (which were nonequivalent) were switched several times during the study; baseline periods for time-series analyses were too short to overcome seasonal trends; the ads (which were not pretested) were aired in an uncontrolled fashion, and two sets had to be prepared to appease prudish station managers (who could then select the ones they wished to air, causing further comparison problems); and awareness studies and measures of contraceptive sales and fertility behavior were all conducted without adequate control. Further problems are evidenced in the planning process used as a basis for the experiment. The analysis of Udry et al. of the problems associated with increasing contraceptive use is insightful. They point out that people are in favor of family planning and nearly all couples use some method of contraception at some time. They feel that the objective of a program to promote family planning should be to encourage people to use contraceptives effectively by stressing specific, immediate benefits and by telling where and how people can get access to contraceptive supplies and services. However, an overview of the messages finds them to be decidedly unspecific and rarely to present information on immediate benefits. The only specific method shown in an ad was a woman tying a string around her husband's finger as a reminder. Many of their messages promoted a euphemistic slogan "Stop the Stork." Based on this kind of campaign, Udry et al. proceed to measure changes in pill and condom sales.

A key problem in communication campaigns is their lack of sophisticated planning, so that messages oriented to solving the key behavioral problems identified are aired and measures are coordinated to tap changes in these specific problem areas. Because of all of these design and methodological faults which Udry et al. honestly present, they claim that mass media can have no effect in the United States on contraceptive practices and ". . . the burden is now upon those who suggest large effects of advertising on contraceptive uptake to prove their claims." Again, no attempt was made to design the messages in accordance with stated objectives or to pre-test them in any manner. This neglects a crucial link in the communication process since the message is the only part of the campaign that the audience can perceive.

Robertson, Seatbelts. Robertson (1974) conducted a controlled investigation of the effects of a media campaign, conducted through a split-cable television system designed for market research, on the wearing of seatbelts. Emphasis was placed on collecting valid and reliable data on seatbelt wearing over the course of the campaign. The authors, however, only measured changes in seatbelt wearing and failed to measure any intervening steps such as attention, attitude change, etc., in order to provide some process-analysis information as to why the program did or did not accomplish its stated goal. No emphasis was made on pretesting the messages in any way except by obtaining preliminary ideas from panels of "experts" and "laypeople," opinions which diverged a great deal. They concluded that:

> The apparent failure of a number of mass media safety belt campaigns to increase use beyond precampaign levels may not mean that it is impossible to create a campaign which will increase safety belt use. However, the evidence on the lack of effect of past efforts is sufficiently strong that the burden of proof of substantial further gains in belt usage resulting from such campaigns is on those who advocate the use of mass media to promote use of safety belts.

Summary. These failures are not adequate tests of the use of mass communication for several reasons. First, they are generally deficient in design. While no field research design is perfect, these studies and others like them could have been improved considerably through the use of state-of-the-art quasi-experimental design (Campbell and Stanley 1963). Second, they all lack sufficient emphasis on the creation of appropriate messages, almost as if any messages will be good enough and the key to success is the use of a mass medium independent of its content. It is ironic that 50 years of research on the message in carefully controlled laboratory studies have been ignored in most social and health communication campaigns. For example, a review of some 40 public education campaigns on cancer control (Butler-Paisley 1975) revealed virtually no evidence of concern with message variables. Additionally, rarely has any adequate pre-testing been done to optimize the messages according to a specified set of objectives. Third, the studies did not usually measure changes which could be reasonably hypothesized to occur as a result of exposure to their messages. The Udry et al. study has been discussed as a good example of this fault. Rarely has sufficient process analysis been conducted so that the reasons for success or failure could provide information for future planners of communication campaigns.

Successes

Few examples of successful health campaigns have been well evaluated and made available in published form, but more information on the impact of health campaigns will be available in the near future. In the field of heart disease prevention alone, there are community education projects underway in South Africa, Australia, Minnesota, California, Rhode Island, Pennsylvania, and Finland, to mention only the larger scale programs.

Four successful campaigns are described, with an emphasis on the lessons learned from them as well as some notion of the key reasons for their success. They vary in design, size, sophistication, and results, but taken together provide a well-rounded background on the possibilities for success in health education using media.

As mentioned earlier, the definition of success is not well explicated in the literature. For the purposes of this review, a success is defined as a campaign that closely accomplished its stated goals and objectives.

Tanzania, *Man Is Health* and *Food Is Life*. Since 1970, Tanzania has made extensive use of radio campaigns for adult education and for mobilization of mass activities. At least two health-related campaigns have been conducted. In both cases, a mass medium (radio in this case) was combined with interpersonal communication which consisted of organized listening groups. These groups listened to the shows, discussed them, and planned followup activities. The *Man Is Health* campaign (Newell 1975) was launched in April 1973. Although the evaluation research is not without faults (Hall 1978), it demonstrated that large-scale behavior change is possible at low cost (about $.09 per listener). The most striking behavior change as a result of the campaign was the construction of 700,000 latrines as advocated in the radio broadcasts and related print materials.

A second campaign concerning nutrition, the *Food Is Life* campaign, was launched for 3 months in 1975. Its goals included increased knowledge about nutrition and use of available foods, low-cost balanced diets, elimination of various food taboos, encouragement of better food storage and preservation techniques, and better farming methods and cooperative activities (Mahai 1976*a*; Mahai 1976*b*; Mbunda 1976). The campaign made extensive use of formative research, especially pretesting of materials. The listeners were organized into study groups, about 75,000 of them, many of which grew out of existing literacy classes. Each group had about 20 or more participants; a total of 1.5 million adults participated in the campaign. Although no overall evaluation was made, results from area samples indicate that the campaign created an increased awareness of the need for more food production, the establishment of vegetable gardens and poultry production; it improved dietary habits and encouraged the establishment of day-care centers.

It should be recognized that the Tanzanian campaigns were massive undertakings closely linked to the existing political structure. This obviously contributed to their success. Typically, 18 months of planning preceded a 10- to 12-week campaign which integrated radio broadcasts, leadership training, study guides, and social support systems. The key to understanding the importance of the Tanzanian experience is not so much its direct applicability to other situations but rather its design which takes account of existing social and media systems in a creative and successful way.

Feeling Good. Although considered by many as a failure of mass communication in health, the *Feeling Good* television series actually produced a number of successful behavior changes (Mielke and Swinehart 1976). *Feeling Good* was an experimental television series on health aimed at adults and produced by the Children's Television Workshop (CTW). The series encompassed 11 1-hour programs and 13 half-hour programs broadcast in 1974 and 1975. The overall objective of the program was "to motivate viewers to take steps which could enhance their own health and that of their families." In all, they measured 33 behavioral goals which were emphasized in the program. Of these, there was strong evidence of behavior change in 10 goals (meaning statistical significance as compared to a control group), partial evidence in 14 goals, and no evidence in 9 goals. The goals which were associated with strong evidence of change included eating more fresh fruit or fruit juice, performing breast self-examination, having an eyesight examination, encouraging someone else to have a Pap test, and sending for health information offered on television.

Many important lessons were learned from the *Feeling Good* series (Swinehart 1976). The overall lesson is that it is difficult but not impossible to have an impact on both health knowledge and behavior with a television series which stresses prevention. Swinehart felt that a 1-hour-per-week format was too long for such a program and that many of the message design strategies selected, such as songs, humor, and strong emotional appeals, were poor vehicles for conveying health information. In fact, the main contribution of *Feeling Good* to the accumulated experience in using mass media in health is probably in the area of message format as it relates to effectiveness. A major finding was that the initial hypothesis that a *Sesame Street*-like group of adult characters was not as effective a method for conveying health information and influencing change as higher information density documentary segments and straightforward information presentations.

Finland, Heart Disease Prevention and Smoking Cessation. The North Karelia project in Finland uses a combination of mass media, training of health personnel, environmental change, and health services to prevent heart disease. The health professionals involved attribute a great deal of success to the use of communication (Puska et al. 1979). In particular, they have expended a great deal of effort in smoking cessation (Puska and Neittaammaki 1980). One of the elements of their program is a good example of a quasi-experimental health campaign using mass media to promote smoking cessation (McAlister et al. 1980). The technique used is quite similar to the design of the Tanzanian health campaigns in that it used a combination of television with small-group social support in order to facilitate performance of modeled behaviors. The program consisted of a series of seven televised counseling sessions where viewers watched a group of 10 smokers in the studio go through the process of quitting. There was strong emphasis on preventing relapse, a major problem in most cessation efforts. Using data from a national sample survey, the study estimated that about 100,000 adult smokers participated in the program and about 10,000 achieved at least 6 months of cessation. Although the estimates are subject to some bias since the measures of cessation were self-reports, if they are even approximately accurate, the program was extremely cost effective; about $1 was spent for each 6-month cessation.

The features of this successful program were its use of theoretical foundations in behavioral science research as a basis for planning the cessation protocol and delivery system. Because of this analysis, television was selected to provide the learning, with similar adults as models on television, and a group setting provided the social support to encourage the adoption and performance of new behaviors. Furthermore, well-tested behavior change strategies emphasizing behavioral self-control were used in the educational process. Apart from some methodological problems in the analysis, the study overcame most of the criticisms of past social campaigns.

The Stanford Heart Disease Prevention Program (SHDPP) Three Community Study. The SHDPP began in 1970 with the formation of an interdisciplinary group of biomedical and behavioral science researchers determined to explore the potential of cardiovascular risk reduction through community education. This education would be administered primarily through the mass media in order to provide public health policymakers with information on the cost effectiveness of community-wide public education.

In 1972, the Three Community Study began with funding from the National Heart, Lung, and Blood Institute of the National Institutes of Health. It was a quasi-experimental field study in three Northern California towns. Two of the communities had extensive mass media campaigns in both English and Spanish over a 2-year period; in one of these, the mass media were augmented with intensive face-to-face instruction of a small subset of high-risk individuals. The third community served as a control. This design was chosen in order to be able to contrast a lower cost mass media campaign using communication messages which focused on changing behavior patterns compared to a much more expensive and labor-intensive mass media campaign supplemented with personal instruction. In this way, a potentially more cost effective, generalizable approach could be compared to a much more intensive and less generalizable model. People from each community were surveyed and examined from a cardiovascular health point of view before the campaign began and again 1 and 2 years afterward. Measurements were made of knowledge and behavior related to cardiovascular risk as well as physiological indictors of risk such as blood pressure, relative weight, and plasma cholesterol. In the community with both mass media and intensive instruction, the initial decrease in risk as calculated by a multiple-logistic risk function (Truett et al. 1967) was greater, but by the 2nd year the mass media only community had equaled it. Risk in the control community increased over the 2 years (Farquhar et al. 1977). The results strongly suggést that mass media educational campaigns directed at entire communities can be effective in reducing the risk of heart attack and stroke. However, the results of the study pointed toward the importance of further research and development of methods to reduce smoking and increase physical activity using media alone.

From a communication research point of view, the Three Community Study was particularly important because for virtually the first time it overcame many of the drawbacks and failures found in previous social campaigns (cf., Star and Hughes 1950; Udry 1974; Atkin 1979). One of the persistent failures of previous campaigns which was successfully overcome by the study was what has come to be known as the "knowledge gap." This gap (Tichenor et al. 1970) is typically found in educational campaigns where the less well-off segments of society are often relatively worse off as a result of the educational program. The Three Community Study used a bicultural campaign where the messages and strategies directed toward the Spanish-speaking population were not just direct translations of those designed for the English population. Rather, they were specifically developed for the particular problems, needs, and motivations of Spanish-speaking members of the communities. Because of this strategy, as shown in figure 1, the gap was actually closed as a result of the educational program.

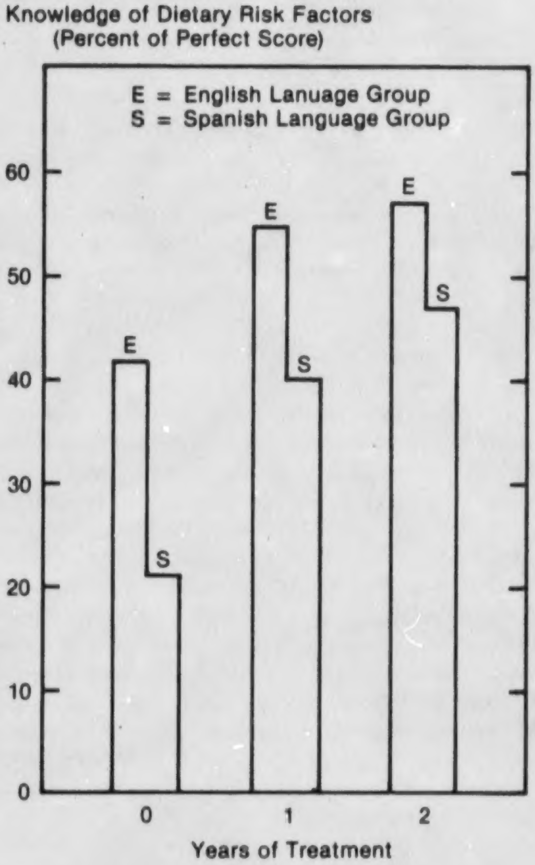

Figure 1. Knowledge of dietary risk factors (a 14-item subset of the total knowledge score) at baseline and after 1 and 2 years of health education among English- and Spanish-speaking participants in the two intervention communities.

In part, the original idea behind the Three Community Study was sparked by the model developed by Cartwright (1971). Cartwright postulated that, in order to modify behavior through mass media campaigns, three separate changes must be achieved: (1) changes in cognitive structures (i.e., what people know and understand), (2) changes in affective structures (i.e., what people want to do), and (3) changes in action structures (i.e., what people actually do and how this can be facilitated). With Cartwright's model as a basis, the SHDPP used mass media in a relatively novel way: to teach specific behavioral skills wherever possible. There is evidence that this approach worked.

Maccoby and Alexander (1979) cite several key features of the Three Community Study which are similar to considerations found in typical marketing programs. These include:

1. The establishment of specific objectives for each component of the campaign over time
2. Clearly defined audience segments
3. The creation of clear, useful, and salient messages through formative research and pre-testing
4. Use of creative media scheduling to reach the audience with adequate frequency
5. Stimulation of interpersonal communication to encourage a synergistic effect of multiple channels
6. Advocation of clear and well-paced behavioral changes in messages
7. Use of feedback to evaluate the campaign's progress over time
8. The use of a long-term campaign to avoid threshold effect considerations

What Makes the Difference Between Success and Failure?

Neither the review of reviews presented here nor the descriptions of projects often cited as evidence of the impotence of mass communication in health provides an adequate basis for designing and predicting the potential of mass media health education programs. Therefore, there is little if any literature on the overall process of campaign design to draw upon. In this section of the review, a macrolevel framework is presented that outlines some important considerations gleaned from the existing literature and past experience in campaign design. The framework consists of four main areas: (1) adequate problem analysis, (2) media selection and use, (3) message design, and (4) evaluation.

Adequate Problem Analysis

Problem analysis sets the overall goals for the campaign. These goals in turn must serve to navigate the educational program through planning, execution, and evaluation. This has rarely been the case in past efforts. Problem analysis exists on two levels: macro and micro. At the macro level, problem analysis consists of setting detailed objectives for the campaign. These objectives must be highly specific, measurable, and reasonable. "Highly specific" means they must define detailed goals in terms of various desirable outcomes. Typically desired outcomes include knowledge change, attitude change, self-efficacy change, behavioral intention change, information-seeking behavior change, stimulation of interpersonal communication, etc. The *Feeling Good* television series is a good example of a program which had specific objectives of almost all the types mentioned here.

It is also important at this macro level to conduct efforts into audience segmentation. "Segmentation" is a term borrowed from the marketing literature which describes a process of breaking down the overall audience defined in the general objectives of the campaign into a series of subgroups which are as internally homogenous as possible and as different from each other as possible. The groups are often segmented by such factors as demographics, attitudes, history of the use of a particular product or service, ease with which they can be changed, and a host of other factors. A key consideration in audience segmentation is the ability to reach these internally homogenous groups through some medium of communication and the ability to serve them with products or services in an efficient way. There is no sense in defining a segment such as "females, age 40–43, who drive Rolls Royces and chew tobacco" if there is no practical way to reach them with information and services.

Objective specification and audience definition begin the problem-analysis process. The approach then shifts to a microlevel behavioral analysis. At least three models for such an analysis exists in literature: Cartwright, McGuire/Maccoby, and Ray. Each model provides a complementary perspective to the others.

Cartwright's model (1971) is the broadest of the three. His model is useful since it allows the analysis of a particular behavioral area among a specific target group and provides implications for what the campaign should stress in order to be successful. For example, he encourages one to look into the cognitive (knowledge and attitudes), motivational (needs, motivations, intentions), and behavioral factors. Each single area, according to Cartwright, is not sufficient for campaign effectiveness. In particular, his inclusion of the behavioral or action area is important. This encourages a planner to consider such factors as whether or not skills training is essential to change behavior, and whether or not behavior can be changed unless services or other necessary infrastructure factors are within reach of individuals exposed to the messages.

McGuire (1969) and Maccoby (1980) provided similar frameworks which follow from a social learning model. While both are similar, the Maccoby framework is most applicable to a health behavior change situation since it includes steps regarding key aspects of behavioral self-management. He proposes five critical stages: awareness, knowledge, motivation, skills learning, and maintenance and self-management. The emphasis on a maintenance and self-management stage is critical since many behavior change programs in health areas such as smoking cessation, weight control, and stress reduction have had temporary success but have failed to maintain long-term changes. This framework encourages the planner to determine where each audience segment is currently situated in the behavioral hierarchy and to consider the blockages and strategies to moving individuals through the process of change.

Ray (1973) proposed a three-order hierarchy model which he applies to the analysis and planning of marketing communication efforts. The first hierarchy is a learning hierarchy (cognitive-affective-conative). This is the one typically assumed in most health programs. Ray proposes that this hierarchy exists when the audience is involved in the topic of a campaign, when there are clear differences between the alternative products (or behaviors), when mass media are involved, and when a product is in the early stages of its lifecycle (i.e., past consumer experience is generally small). The second hierarchy, the dissonance-attribution hierarchy (conative-affective-cognitive), is the exact reverse of the learning order. The basic situation this occurs in consists of high involvement with almost indistinguishable alternatives (usually involving interpersonal communication and particularly peer pressure) with products and ideas people have had a great deal of experience with. This hierarchy may be particularly important in situations where people are either forced to enact some behavior or among people who have already voluntarily enacted it. For example, if one learns through formative research that people spontaneously quit smoking on their own, the emphasis might be on affective and cognitive strategies based on a thorough understanding of how to maintain the existing behavior change through proper attribution and dissonance reduction. The final hierarchy is the low-involvement hierarchy (cognitive-conative-affective). This typically occurs with products people have experienced which have minimal differences among them, and for which mass communications have been involved in generating preferences. This hierarchy is typically found in mass media advertising of low-priced consumer products but can also occur in situations such as insurance purchasing, voting for local candidates, and over-the-counter drug-purchasing decisions.

The relevance of these three micro-analysis models is that they encourage the planner to look not only at the message and receiver but also at the behavioral arena, including such factors as accessibility to facilities needed to change successfully and skills-learning deficiencies. Secondly, they encourage the planner to study each situation to determine specifically where key target audience segments stand in relation to a particular hierarchy to avoid wasted efforts or potential boomerang effects. For example, antismoking programs wasted efforts for many years based on the fallacious assumption of the learning hierarchy that people were not aware of the health hazards of smoking and needed to be persuaded to quit. Finally, the micro models allow for detailed objective setting and specific evaluation of these objectives on various levels of the selected hierarchies. The key to the problem-analysis stage, regardless of the framework chosen, is the expenditure of considerable effort on problem definition and detailed objective setting based on a thorough understanding of the relevant beliefs, information needs, knowledge levels, current behaviors, and blockages to change on the part of the target audience segments. This process often requires formative research efforts to answer key questions about the audience, particularly to look at the blockages to change from their viewpoint and some potential strategies to overcome them.

Media Selection and Use

Media considerations have rarely if at all been considered in past health campaigns. Media choices have usually been taken as given, and taken for granted. There are two main questions in considering media: Which medium or media should be used in a given campaign, and how should it/they be used?

Formative research is the key to successful media planning. The first step is to conduct some type of research to determine the media-use patterns of the key target audience segments. The current media choices of these segments are probably the most appropriate for use in future campaigns.

Other important considerations are the match between the goals of the campaign (particularly those relating to a choice in hierarchies of learning), the particular requirements of the message, and the medium to be chosen. For example, if a dissonance-attribution hierarchy is assumed, then the main medium may be interpersonal communication which will be used to encourage a new complex behavior requiring the flexibility and detail that interpersonal communication can provide, coupled with a mass medium such as radio or print reinforcing and maintaining the behavior. An example of such a choice was the Finnish smoking-cessation program which used small-group communication to provide social support for change, with television providing supportive informational material. The medium-message fit is usually of concern when a message is quite complex and must be presented in a medium which has a high channel capacity, for example, print media such as books and newspapers.

The use of multiple channels of communication and the coordination of messages among these channels are also of great importance. Multiple channels tend to reinforce one another and provide a synergistic effect. Multiple channels can also carry different types of information. For example, a radio message of low-information density can be designed not to provide information on the topic but merely to stimulate subsequent information-seeking behavior in a high-information density medium, such as a booklet. Campaign planners usually also stress the importance of coordination of the visual and verbal information in all media used in order to maximize the desired synergistic outcome.

Finally, an important concern in media planning is that messages receive adequate exposure among the target audience. Exposure consists of three main factors: reach, frequency, and timing. "Reach" means the number of people in the target group exposed one or more times. "Frequency" is the number of times an average person reached is exposed per unit of time. "Timing" is the time of day the message is placed in the mass medium. Although timing is a factor in reach, most television and radio health campaigns use public service broadcast time and are exposed at the whim of the broadcaster (often in the early hours of the morning), timing is an important practical factor. There is also a concern with a threshold effect in communication campaigns. Many past campaigns may have failed simply because reach and frequency were inadequate. It is beyond the scope of this review to discuss how to determine adequate reach and frequency. Suffice it to say that this is best determined by being empirically oriented through the use of field experiments and evaluation research studies.

Message Design

Message design is the term used to describe the process of highly specific objective setting, generation of alternative message approaches, pre-testing, and revision of messages to be used in a campaign. A vast body of knowledge exists on considerations concerning traditional communication variables such as the source, message, channel, and receiver (cf. McGuire 1969; Schramm 1972; Zimbardo et al. 1977). This huge resource should not be ignored as has often been the case by past campaign designers. However, this body of laboratory studies should not be expected to provide direct implications for health campaign message design. There is a persistent misconception in the literature, evidenced and reinforced by Atkin's (1979) review, that these studies are directly applicable. Ray (1975) provides a unique compromise between these conflicting viewpoints. He discusses a concept called "micro-theoretical notions of behavioral science" which are simply generalizations from past research set within situation-specific hypotheses. For example, he demonstrates how the conflicting evidence on the use of fear appeals can be reconciled when looked at in a situational perspective.

Ray's analysis suggests that situational factors which may influence the effect of mass communication campaigns should be considered. In addition, it is important to use an empirical approach to message design which relies heavily on formative research and on pretesting to insure that messages accomplish what planners have designed them to do.

Evaluation

To be useful in present and future campaigns, evaluation research must walk a tightrope between a theoretical and a practical orientation. Theory must exist in the basic framework of a campaign in order to understand the process of behavioral change. Practicality must exist in order to use the results of the evaluation in a meaningful way. Therefore, for an evaluation to be successful, it must study both outcomes and processes. Measuring desired outcomes is obviously important in order to determine whether or not goals have been reached. This is used in most evaluations, although not always in a valid and meaningful way, but the process of change is rarely studied. Evaluations are so accustomed to asking, "Did it work?" that they often forget to ask, "Why did it work?" The Robertson et al. (1974) seatbelt promotion campaign is a classic example of this sort of mistake. Using the state-of-the-art in quasi-experimental design, they learned that their campaign had no effect; however, they were hard pressed to explain this outcome. It is meaningless to provide a "yes/no?" answer in evaluating a campaign, since no one benefits from the research results in terms of planning future efforts, even when the answer is a "yes."

Summary

This section presented some important considerations concerning problem analysis, media selection, message design, and evaluation which have rarely been considered in past health education programs. There is great potential for improving the effectiveness of future campaigns if these important areas are considered. This consideration need not be elaborate or expensive; the main ingredient is thinking. Small expenditures in problem analysis and planning can reap huge dividends, particularly where large mass media campaigns are at stake.

Implications

This review attempts to put forth only one idea: It is time to stop asking the question, "Do mass media work in health?" and start asking "How can we best make them work?" Research over time will provide information on the effectiveness of well-planned and well-administered state-of-the-art programs. This will increase our knowledge on how to create successful campaigns in the future. The emphasis should be on developing campaigns with sophisticated care, planning, and the resources of behavioral science experience and techniques. If this is accomplished, the dream of reaching a mass audience at low cost and encouraging voluntary changes in health behavior may be realized.

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Television and Persons in Institutions

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Among its recommendations for future research, the Surgeon General's Scientific Advisory Committee on Television and Social Behavior noted the need to look at "predispositional characteristics" of the viewer. This recommendation reflected the committee's concern that prior research, including that commissioned for the Surgeon General's report, had not focused sufficiently on what the viewer brought to the act of watching but rather on what was being watched. While much emphasis in television research continues to examine what is being watched, the contribution of the viewer to this relationship has become of interest in recent years.

It is ironic that, when the Surgeon General's committee addressed the issue of predisposition in its major conclusion about television violence and aggression (". . . the causal sequence is very likely applicable only to some children who are predisposed in this direction"), it was misunderstood by some critics of the report as a euphemism for mental illness. The committee had no evidence about the effects of mental illness on the viewer's response to television violence and meant only to suggest, rightly, that the person watching brought something other than simple attention to the act of viewing.

What the individual brings to the process of viewing is nowhere a more intriguing issue than with those persons who engage in that process outside the normal home environment. Of special importance is not just the circumstance of viewing in some institutional setting but the reasons for the viewer being in such a setting. The patients in mental institutions, in homes for the aged, in general hospitals, or in various detention centers and prisons, all are engaged in other than "normal" viewing under other than normal circumstances. If "predisposition" is of any significance, it should be especially so under these specialized circumstances.

There have been relatively few field studies involving persons in institutions. Among the earliest are those concerned with boys in various residential schools (Feshbach and Singer 1971; Parke et al. 1977; Wells 1973). The Feshbach and Singer and the Wells studies were concerned with the effects of television violence and were conducted in institutional settings more because of the opportunity to test the effects of television violence over time in a controlled environment than because of special interest in the sample populations or in the residential setting in which the viewing took place. The study by Parke et al. was specifically concerned with institutionalized juvenile delinquents and with how filmed violence affects these individuals who have prior histories of aggressive behavior. Parke and his colleagues concluded that "predispositional factors" were not found to influence aggressive reactions to violent films, although in one part of the study with single-exposure subjects, viewers who were initially more aggressive were more affected by the filmed violence.

Menzies (1971) looked at television preferences among prisoners. She took a sample of 40 male inmates at a Florida Federal prison. Half of the sample had a history of overt aggression prior to imprisonment, including assault and/or destruction of property. The other half did not have such a history. From a nearby vocational school, a third group of 21 males was equated for age, race, and education and used as a comparison group. In an experimental situation, the subjects selected between violent and nonviolent content in a series of videotaped pictures. Results failed to support the hypothesis

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that persons with assaultive social histories would show more preference for violent content than either nonaggressive prisoners or a comparison group of males outside prison.

Mental Patients in Psychiatric Settings

Perhaps the first extended examination of television viewing by mental patients was a survey of 18 State psychiatric centers, representing 80 percent of New York's inpatient population (Rubinstein et al. 1977). The questionnaires, which were completed by the centers' directors and by ward personnel, revealed that the center directors generally believed television viewing had a positive effect on patients and that such viewing may have potential as a modest therapeutic procedure in mental hospitals. The ward staff reported television viewing as a pervasive activity, with variations in behavior among subgroups of patients. Ward staff reported that television viewing seemed a more beneficial activity for chronic and geriatric patients than for adolescent or acutely ill patients. Results suggest that age, intensity of illness, and length of institutionalization influence how television affects these patients.

In another portion of their study, Rubinstein et al. (1977) examined the television-viewing behavior of a sample of patients in a treatment facility for emotionally disturbed children on Long Island, N.Y. Using a special survey form, trained research assistants interviewed ward staff to obtain information on patient characteristics and the prevalence and patterns of their television-viewing habits, program preferences, and program-related behaviors. Behaviorally disturbed children were reported to watch television about 3½ hours per day, while autistic children watched about 1 hour per day. The ward personnel believed television viewing generally had a positive effect. At the same time, almost all children were observed to engage in behaviors that related to what they had viewed, including aggressive behavior seen on television. Imitative behaviors of various superheroes seen were mentioned as prevalent. Seventy percent of the respondents reported various acting-out behaviors which seemed to be provoked by what the children had seen on television, including positive behaviors as well negative ones. Responses were characterized by marked interpatient differences. Predispositional characteristics seemed to be at least partly the reason for such differences.

In a comparable series of studies, Jeffers and his colleagues (Jeffers et al. 1979) looked at media use in a mental institution in Illinois. They found that television viewing was almost exclusively the media activity. In an earlier report, these authors (Ostman et al. 1978) compared their findings on television viewing with those of the study by Rubinstein et al. (1977). The two studies differed in sample size and in methodology. The New York study was a mail survey of 18 psychiatric centers and a sample of 2,181 patients. The Illinois study was a direct observation of from 67 to 98 patients on two wards in one mental health center. Despite these differences in approach, results of both studies were quite similar. Television viewing was a dominant leisure-time activity and was informally used by the institution as a dominant focus of patient attention in the dayroom or hospital lounge area. While patients were not always attending to the program shown (in the New York study, patients actively watching varied from 41 percent of male chronic patients during daytime viewing to 81% of female adolescent patients watching during daytime viewing), the television sets were turned on an average of over 12 hours per day.

In related studies, Ostman and his colleagues (Ostman et al. 1978, 1979) compared normal and mentally disturbed individuals in their use and perceptions of television content. In the 1978 study, Ostman and his colleagues examined the relative knowledge of current events of samples of 41 mental patients and 47 university students. While the university students had a significantly higher knowledge of current events than the mental patients, no significant differences were found between the two groups in their mass media use patterns. In the 1979 study, Ostman and his colleagues found that a sample of acutely psychotic patients in a mental health center perceived television content as more realistic than did a random sample of the general population.

The unanswered question in regard to these institutionalized mental patients is not whether television is a significant part of their daily lives but how it can be made a more constructive part of their treatment. The marked interpatient differences that were found in the Rubinstein et al. study (1977) are worthy of further examination. While 34 percent of all patients became more relaxed, 38 percent grew restless or bored, and others became agitated or upset and sometimes talked back to the television. The relationship of these different reactions to other patient characteristics may increase our understanding of the role television plays among these different groups.

Another interesting finding relating patient behavior to television indicated that, in a study of the art productions of 55 schizophrenic patients (Wadeson and Carpenter 1976), some patients incorporated television program material into their psychotic delusions.

In a more extended study of the television-viewing behaviors of emotionally disturbed children, Rubinstein and his colleagues (Kochnower et al. 1978) found that inpatient emotionally disturbed children reported watching 21.6 hours per week while outpatients viewed 31.8 hours per week. In assessing the impact of television viewing on these children, it was found that 75 percent of both the inpatient and outpatient groups reported seeing behaviors on television they wished to imitate. A greater percentage of inpatient children (87 percent) than outpatient children (39 percent) actually attempted to carry out one or more of these behaviors. Furthermore, about one-third of both groups of children reported dreaming frequently about something seen on television, with about one-half of those dreams involving frightening material. On the other hand, 80 percent of both patient groups associated television viewing with positive mood states.

In commenting on the potential therapeutic use of television in a mental hospital, Jeffers et al. (1979) note the need for a structured effort to use television for therapeutic purposes in a mental hospital. This echoes the recommendation made earlier by Rubinstein et al. (1977). One study attempting to do this is described later in this paper. There is obviously much more research that can and should be initiated toward such ends.

It should also be mentioned that the portrayal of mental illness on television is another source of potential therapeutic use of television for the mentally ill. Unfortunately, what little information is available suggests that the mentally ill are likely to be stereotyped as either violent or the victims of violence. Gerbner and his colleagues (Gerbner et al. 1979) found that 10 percent of prime time network dramatic programs involve some depiction relating to mental illness. The characterization is usually that of a dangerous, if not an evil, individual. The usual portrayal is not conducive to either an accurate public understanding of the mentally ill or to a constructive self-image among the mentally ill themselves.

Old Age Settings

One recent study (Davis et al. 1976) noted that little was known about the viewing behavior of older persons, despite the size and importance of that audience. And even among the studies reported, data were obtained mainly from older viewers in their own homes. Only one part of the study by Davis et al. (1976) deals with individuals in homes for the elderly. Compared with two samples of older viewers living in private homes, the individuals in residential homes spent significantly more hours viewing. In one sample of nonresidential older viewers, 75 percent of the sample reported watching television 5 hours a week or less. In the sample of institutionalized older viewers, the men watched 27 hours per week, while the women watched 22 hours. The 1973 Nielsen data showed adult males watching 25 hours and adult women watching 31 hours per week. The reason for the discrepancy by sex was not discussed by Davis et al., except to suggest that their reporting methods may not be fully reliable.

What is clear is that most studies of viewing by the elderly report television viewing as the most frequently named daily activity (De Grazia 1961; Schramm 1969; Schalinske 1968; Zborowski 1962). As with institutionalized mental patients, however, extensive data on television viewing behavior of older viewers are not available. What is known suggests that television plays an increasingly important role for these individuals as a source of information and entertainment. Davis et al. (1976) note that their sample of hospitalized elderly preferred news and public affairs programs. Next in preference were game shows, comedies, and drama. The one program most preferred was the *Lawrence Welk* show. It is noteworthy that the study by Rubinstein et al. (1977) reported that the geriatric population in the State psychiatric centers also reported *Lawrence Welk* as their single most popular program. Similarly, the latter study showed that the geriatric patients preferred news programs. Also, the geriatric patients in the psychiatric centers spent more hours watching television than either the adolescent or acutely ill patients.

In a more extensive report of the study of a sample of hospitalized elderly, Davis and Edwards (1975) suggest that, while regular broadcasting provides important information and entertainment for the inmates, cable-linked television offers many additional possibilities. They suggest that specialized programing may have therapeutic potential. While some efforts at specialized programing (*Over Easy*) and special cable-television programing have been recently introduced, little is known yet about the benefits of such programing.

Other Populations in Institutions

We have found no published studies of television viewing in other institutions such as general hospitals. From general observation, we suspect that a significant amount of leisure time is spent watching television. For example, the use of television sets in general hospitals is widespread. Patients have the option of renting such sets by the day, and in most hospitals the sets are in constant use. An informal survey of one major hospital in North Carolina reveals that the television sets in patient rooms are used by almost all patients. Staff at the hospital note that some patients not only watch what is on for hours at a time but fall asleep more easily with the set on. In perhaps much the same way that television is available and used in hotel and motel rooms, it has also become a constant companion in the general hospital.

Some efforts have been initiated at studying television viewing by hospitalized children. Frankel (1977, 1978) described a series of steps taken by pediatricians to examine children's viewing patterns at one major general hospital in California. In addition, in 1976, a letter expressing concern about television viewing by young patients was sent to every children's hospital in the United States, every U.S. medical school's department of pediatrics, and every general hospital with more than 250 beds. At the same time, a pilot effort was started to provide a special closed-circuit cable channel for children's programing. While no final results have been made available, this initial effort at special programing seems to have been successful. It represents one preliminary effort at examining and modifying television viewing for the institutionalized individual in keeping with the broad therapeutic goals of the institution. Obviously much more along these lines can and should be done.

While it is not directly relevant to this review, it should be noted that much use is made in hospitals of instructional and educational television films for patients before surgical procedures are initiated or at other appropriate points in the course of their hospitalization. Much more extensive use of television for these purposes and others should be pursued. Research to evaluate the effectiveness of such use would be valuable.

Other specialized populations and their television viewing, not necessarily in institutions, have been the focus of some attention in recent years. Gadberry (1980) has been involved in one effort to develop a series of television programs designed to teach social skills to retarded adolescents and adults. Results are not yet available, but other efforts along these lines will undoubtedly take place.

Licker (1978) collected data on the use of television and other media by a sample of about 400 disabled individuals in Canada. While these individuals were not in institutions, they were not as mobile as the able-bodied viewer. Results showed that the disabled used the mass media primarily as a time filler and that television and the other media do not serve the special needs of the disabled.

Therapeutic Uses of Television: An Experimental Study

Clearly television pervades the daily lives of residents in institutional settings. However, there has been little, if any, documented use of television in a therapeutic or even purposeful way. In view of the amount of time that residents spend watching television, a provocative question becomes: Can the viewing experience be structured to promote therapeutic outcomes?

In the latter part of 1980, we completed a study with a population of youngsters who were institutionalized in a psychiatric setting. The majority of the youngsters had serious problems in their social functioning, particularly with respect to antisocial behaviors. We asked specifically whether exposing the youngsters to a "diet" of programs which portrayed socially desirable or "prosocial" behaviors would result in positive changes in the youngsters' social behaviors and attitudes.

The project was an outgrowth of an expanding literature that documents the presence of prosocial behavior in regular entertainment programing and the facilitation of prosocial behavior in children exposed to such content. In numerous content analyses spanning different broadcast periods, it has been shown that altruistic and sympathetic behaviors are presented at a reasonable frequency (Harvey et al. 1979; Liebert and Poulos 1975; Poulos et al. 1976). Furthermore, in both laboratory (Collins and Getz 1976; Murray and Ahammer 1977; Sprafkin et al. 1975) and naturalistic settings (Friedrich and Stein 1973; Moriarty and McCabe 1977), it has been documented that specific prosocial behaviors are increased for youngsters who are shown programs containing these behaviors.

While all of the studies have been done using normal children, one study provides suggestive evidence that behavior-problem youngsters might benefit even more than the normal population from exposure to prosocial programing. Stein and Friedrich (1972) found that preschool children who were from lower socioeconomic class families showed the largest increase in prosocial interpersonal behavior after exposure to a prosocial diet of *Mister Rogers' Neighborhood.* The researchers speculated that the home environment of these children did not reinforce prosocial behaviors to the extent done in middle-class homes and that this "socialization deficit" was filled with the prosocial programing. Similarly, it may be that, relative to normal children, those with behavior problems could benefit from exposure to prosocial behaviors and attitudes and that television could provide this added reinforcement.

The Design

Insofar as our previous survey at the children's center (Rubinstein et al. 1977) revealed that the patients usually watch fairly violent types of programs, it was clear that their normal television viewing would not expose them to many prosocial themes. Accordingly, the study involved constructing a prosocial television diet containing programs with frequent instances of prosocial behaviors and assessing its influence relative to a "control" television diet composed of programs representative of the youngsters' typical viewing fare.

One concern about these patients was that their attention span and intellectual abilities were more limited than that of normal youngsters, two factors which might prevent them from extracting the prosocial television messages. It was thought that adult reinforcement of the prosocial themes might be necessary for the youngsters to learn and incorporate the positive messages. Therefore, a second aspect of the study was to assess the effectiveness of highlighting the most salient prosocial content in an adult-led group discussion after each program.

A parallel discussion session for the control television diet was designed to assess whether an adult-led discussion of the antisocial behaviors contained in the programs could decrease the adverse influences of such television content. This seemed to be a particularly important question to address with this special population in that they seemed to be at greater risk than normal children in being adversely affected by television violence. Television violence has been shown to influence the less mature and initially more aggressive preschool child (Friedrich and Stein 1973). Since both these characteristics are common in the institutionalized population studied and since their typical viewing included high levels of violence, it seemed extremely worthwhile to discover ways to counteract the negative influences. Prior research has shown that adult disapproval of aggression seen on television can at least temporarily decrease the facilitation of viewer aggression (Grusec 1973; Hicks 1968; Horton and Santagrossi 1978). In the present study, the effect of the control diet without a discussion was compared to that with a postviewing discussion which highlighted and evaluated the most salient antisocial behaviors.

To summarize, there were four treatment conditions in a 2 by 2 design: Each treatment included either the prosocial or control television diet and either the presence or absence of a postviewing discussion session. The television diets were each composed of 10 half-hour programs, one program being shown each weeknight over a 2-week period. The 10-minute group discussion followed immediately after the program showing.

The Television Diet

The prosocial and control television diets were selected from an extensive videotape library of previously broadcast commercial programs. All programs (half-hour each) had been plot-summarized and rated with a systematic code (Rubinstein et al. 1974) for prosocial and aggressive content, for numerous content analyses spanning 5 years (Donagher et al. 1975; Harvey et al. 1979; Liebert and Poulos 1975; Poulos et al. 1976). The prosocial diet was screened using the behavioral criteria established for a previous field-experimental study (Liebert and Poulos 1975); specifically, programs containing at least 29 prosocial acts and less than 3 aggressive acts per hour were labeled "prosocial."

The plots of the prosocial programs were then examined to identify those that were most suitable for the population of disturbed youngsters. The themes dealt with in the final prosocial diet included: the benefits of helping others, compromising when there is a conflict, considering other peoples' feelings, cooperating with teachers, and the problems with stealing and with playing practical jokes. The series used included situation comedies (e.g., *Brady Bunch*), dramas (e.g., *Room 222*), and cartoons (e.g., *Fat Albert and the Cosby Kids*).

To assess the youngsters' typical television diet for the construction of the control diet, viewing diaries were collected on the four participating wards about 3 months prior to the initiation of the field experiment. The viewing diaries were completed by the child-care workers on the afternoon and evening shifts during the last 2 weeks in October 1978. The completed diaries were collected from the clinical staff members daily for the 2-week period. Based on the viewing diaries, the ten most frequently watched half-hour programs across the four wards were selected for the control diet condition, which resulted in seven cartoons (e.g., *The Flintstones*) and three situation comedies (e.g., *Sanford and Son*).

The Postviewing Discussion

The discussions about the programs were led by one of three senior research associates who followed structured scripts based on each of the programs. The discussions focused on the major prosocial and antisocial themes and behaviors in the programs, particularly on the motivations for and consequences of these behaviors and on an evaluation of how the characters handled the highlighted situations. After discussing the situations presented in the program, the leader stimulated discussion of similar situations that the children might have faced, how they handled them, how they felt about them, and what the consequences were. A deliberate attempt was made to reinforce the prosocial behaviors and discourage the antisocial behaviors.

The Procedure

The research was conducted at a State inpatient facility for psychiatrically disturbed children in Long Island, N.Y. Almost all the children were Long Island residents. A total of 132 youngsters on the four highest functioning wards participated in the study. Three of the wards contained boys, and one ward contained girls. The young-

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sters' average age was 14 years (ranging from 8 to 18 years), and their average IQ was 87.8 (on the WISC). The youths had been in the facility for an average of 1 year prior to the study, with 44.4 percent being diagnosed as unsocialized aggressive reaction, 20.3 percent as schizophrenic, 15.8 percent as adjustment reaction of childhood, and the remainder as organic brain syndrome, retarded, or anxiety reaction.

Each of the four television discussion treatments was administered to three wards over the course of one year. (Scheduling constraints at the clinical facility precluded the administration of all of the four treatments on each of the four wards.) Each ward thus was the site of three treatments. Treatments were ordered so that each treatment was administered first on a ward, and on each ward the prosocial diet was alternated with the control diet.

The administration of each treatment required 4 weeks: 1 week of baseline assessment, followed by 2 weeks of treatment and 1 week of followup assessment. During the 2-week treatment phase, a television program from the appropriate diet was shown on the ward immediately after dinner (between 5:30 p.m. and 6:30 p.m.). During the viewing, the youngsters' attention to the program was assessed using the method developed by Stein and Friedrich (1972). If there was a discussion condition, it followed the viewing and lasted 10–12 minutes. Then a written, multiple-choice comprehension test focusing on the main prosocial and antisocial messages contained in the program was administered. During the baseline and followup weeks, several dependent measures were collected, but there was no exposure to the television diets, although some incidental television viewing occurred.

The Dependent Measures

The pre-post dependent measures assessed the youngsters' social behavior in a variety of ways. They were observed for three dispersed 3-minute time blocks every evening of the 4-week treatment phase, behavior being recorded as being exhibited or not after every 30 seconds of observation. The behavioral categories included three prosocial behaviors (altruism, affection, and appropriate interaction) and four aggressive behaviors (physical, verbal, symbolic, and object aggression). Periodic reliability assessments on the use of the code have yielded satisfactory interrater agreement (agreement ranged from 65 percent to 74 percent). The pre-post assessments also included two paper-and-pencil measures, the Response Hierarchy (Leifer and Roberts 1972) and the Locus of Control (Bialer 1961).

The Findings

The effects of the television diets and the postviewing discussions were assessed with a three-way analysis of variance on each of the dependent measures (three prosocial and four aggressive behaviors, Response Hierarchy, and Locus of Control Scores). The television Diet (Prosocial/Control) X Discussion (With/Without) X Phase (Pre/Post) analyses were performed on the 102 youngsters who attended at least four of the ten treatment programs in any treatment cycle. The major findings are presented below, and a detailed account of them is contained in the full report (Sprafkin et al. 1980).

Of the positive social behaviors, there was a significant Diet X Phase interaction for Altruism ($F = 3.93$, $p < .05$) which indicated that youngsters who saw the prosocial television diet increased in altruistic behaviors from the pretreatment to posttreatment period (1.05 to 1.25 behaviors per 3-minute interval), while those who viewed the control diet behaved less altruistically (1.25 to .89 behaviors per interval). As table 1 shows, for the low IQ children, the discussion decreased altruism, while for the high IQ children, altruism increased both with and without discussion (Discussion X Phase X IQ interaction; $F = 7.45$, $p < .01$). The patients' initial level of physical aggression determined the influence of the television diets on altruism in that the high aggressive youngsters' altruism increased significantly from exposure to the prosocial television diet and decreased significantly from exposure to the control television diet, while the low aggressive patients' behavior did not vary with television diet (TV Diet X Phase X Baseline Aggression interaction; $F = 4.85$, $p < .05$. Table 2 presents the means).

Table 1

Mean Altruistic Behaviors at Pre- and Post- Phases for High- and Low-IQ Youngsters Exposed to Discussion and No Discussion

	Discussion	No Discussion
Low IQ		
Pre	1.34	1.32
Post	.71	1.33
High IQ		
Pre	.74	1.01
Post	1.16	1.26

A parallel set of ANOVAs were performed on the aggressive behavioral categories. A significant TV Diet X Discussion X Phase interaction was found for Verbal Aggression (threatening, teasing, or derogatory comments) and for Object Aggression (destroying or dam-

Table 2

Mean Altruistic Behaviors at Pre- and Post- Phases for Low and High Aggressive Youngsters Exposed to Two TV Diets

	Prosocial TV Diet		Control TV Diet	
	Low Aggression	High Aggression	Low Aggression	High Aggression
Pre. . . .	1.07	1.01	1.16	1.70
Post. . .	1.00	1.49	1.23	.36

aging objects) [$F = 9.96$, $p < .01$ and $F = 4.57$, $p < .05$ respectively]. As tables 3 and 4 indicate, for both behaviors, the prosocial television diet with discussion led to an increase in aggression, while without the discussion, aggression decreased. On the other hand, at least for verbal aggression, the discussion for the control diet decreased aggression, while its absence increased aggression. For Symbolic Aggression (use of noncontact or nonverbal means to harm someone, including chasing and threatening gestures), there was a significant Diet X Phase X Baseline Aggression interaction ($F = 5.09$, $p < .05$). Table 5, which presents the means, suggests that Symbolic Aggression decreased, in both the discussion and no-discussion conditions, for the high aggression youngsters who were exposed to the prosocial television diet, while none of the other groups changed from the pre- to post-phase.

Table 3

Mean Verbal Aggressive Behaviors at Pre- and Post- Phases for Youngsters Exposed to Two TV Diets With and Without Discussion

	Prosocial TV Diet		Control TV Diet	
	Discussion	No Discussion	Discussion	No Discussion
Pre. . . .	.15	.21	.20	.10
Post. . .	.25	.13	.09	.28

Table 4

Mean Object Aggression at Pre- and Post- Phases for Youngsters Exposed to Two TV Diets With and Without Discussion

	Prosocial TV Diet		Control TV Diet	
	Discussion	No Discussion	Discussion	No Discussion
Pre. . . .	.01	.09	.08	.03
Post. . .	2.79	.02	.06	.06

An analysis of the attention and comprehension scores (averaged over programs within treatments) revealed that the average attention score was 77 percent and the average comprehension score was 60.5 percent. These scores were not found to vary with television diet, the discussion condition, or IQ. Overall, the attention scores suggest that the children who watched the showings were quite attentive, especially when one considers the distractions present in a group-viewing situation. Similarly, the comprehension scores suggest that the viewers understood a fair amount of the critical social content; given the low reading scores of this population, it is likely that the written comprehension test underestimated what was actually learned.

The results of this field investigation suggest that television can be used effectively to facilitate positive changes in the social behavior of institutionalized behaviorally disturbed children. Youngsters exposed to a 2-week diet of prosocial programs behaved more altruistically, were less verbally aggressive, and were less destructive relative to viewers exposed to the violence-laden programs typically viewed by this population. Further, for youngsters initially more aggressive than the average (for this population), exposure to the prosocial diet resulted in a decrease in threatening aggressive behaviors and gestures. Similarly, it was this initially aggressive subsample which benefited the most from exposure to the prosocial programs; that is, the frequency of their altruistic behaviors increased more than that of the less aggressive individuals.

These latter findings parallel Stein and Friedrich's (1972) finding that, of the children exposed to their prosocial program regimen, the lower socioeconomic

Table 5

Mean Symbolic Aggression at Pre- and Post- Phases for Low and High Aggressive Youngsters Exposed to Two TV Diets With and Without Discussion

	Prosocial TV Diet		Control TV Diet	
	Low Aggression	High Aggression	Low Aggression	High Aggression
Pre. . . .	.03	.37	.05	.28
Post. . .	.10	.08	.03	.25

class (SES) viewers increased in prosocial interpersonal behaviors more than did the higher SES youngsters. Their explanation for this finding was that the lower SES children had a "socialization deficit" relative to the high SES group in that prosocial values were less reinforced in their homes than in higher SES homes; this deficit could be filled with televised prosocial messages. Similarly, in our study, it may be that, for the youngsters who behaved in antisocial ways, the prosocial programs communicated new information about peaceful behaviors. Perhaps a longer exposure to the prosocial diet would have resulted in decreases in physically aggressive behaviors.

Another encouraging finding was that the prosocial programs shown were as appealing as those normally selected; that is, the prosocial programs attracted the viewers' attention to the same degree as programs more typically selected by the youths. This suggests that ward personnel could guide the children's program selections to include programs with constructive messages.

The potential of increasing the prosocial effects with a postviewing discussion is less clearcut. The discussion in the prosocial diet appeared to undermine the positive program effects. Viewers who saw the prosocial diet without discussion became less verbally aggressive and less destructive, while those who also discussed the program became more aggressive in these ways. Likewise, low-IQ children became less altruistic in the discussion conditions. On the other hand, the discussion accompanying the control television diet did not have this negative effect; in fact, the discussion appeared to counteract some of the adverse effects of the violent content.

A possible explanation for these findings is that the youngsters in the target population tend to be rebellious, nonconforming, and oppositional and tend to maintain a "tough" image. Such individuals might have actively resisted an adult's direct support of altruistic peaceful behavior in much the same way as they oppose other adult directives. In contrast, the prosocial messages contained in the television programs were couched in less moralistic terms; and they were presented more casually than was the case for the discussion leader, who by assuming a teacher-like role almost invited resistance from this population.

We hope that the promising results obtained with the prosocial television diet will inspire further research on how to maximize positive effects. Clearly, a more concentrated "dosage" of prosocial programs might have been more successful. Further, an examination of the postviewing group discussion process is warranted to determine more effective ways to emphasize televised prosocial content to disturbed children.

Conclusions

Despite their preliminary status, the findings on television and institutionalized persons strongly suggest that television viewing can be made a more supportive part of the structured environment for these individuals. What is needed is a better understanding of how television is presently used and how the television diet might be modified to increase its positive effects.

The fact of institutionalization and the reasons the individual is in other than a home environment make television a less casual part of the daily routine than it is for the home viewer. Not only is the challenge to research to find ways to use television more productively in these settings, but such efforts will add to the better understanding of how television affects us all.

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TELEVISION IN AMERICAN SOCIETY

Introductory Comments

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Television is both a unique medium of representation and an organization peculiarly adapted to the social structure it serves. In both capacities, television represents a direct link (although by no means a simple one) between technology and social organization on one hand, and human consciousness and behavior, on the other.

The formation of publics and the shaping of conceptions and behaviors are influenced by the nature of the medium and by its functions as a social institution. The two reviews in this section summarize research about how television production is organized and how television relates to other institutions in society.

It is clear that American television is a product of American society. It is a government-licensed private business operating in the public domain (the airways) but supported via an increment in the price of products (the amount that is spent on advertising which pays for all commercial television), levied on all who buy products whether or not they use the television service. Some call this levy a hidden tax because advertising is a tax-deductible business expense. Yet there is no public representation in making decisions about how it is used. Programing is shielded from direction by government (at least public government) by the First Amendment to the Constitution.

Resting on these legal foundations and protections, centralized corporate direction over television is almost complete. A portion of consumer expenditures is channeled via advertising moneys to produce programs that attract consumers. The principal product of television is, therefore, the audience whose time and attention are purchased at the rate of about $10 per thousand viewers for one commercial minute in prime time. The larger the number and the higher the "quality" (i.e., purchasing power) of viewers tuned to a particular program, the higher the price for that program. The purpose of audience ratings is to establish that price on the basis of the size and "quality" of the audience.

All commercial production reflects, at least in the long run, the underlying formula of "cost per thousand." Ratings do not really test either popularity or quality of programs. They only show the size of the audience that a given program attracts at a certain time and against specific competing programs aired at the same time. Ratings do not show audience approval of any program by itself. In fact, television viewers are the least selective of all media consumers. They watch more by the clock than by the program. Television viewing fits into styles of life and follows regular rhythms of the day, the week, and the season. The total number of viewers tuned in at the same time is usually the same, year in and year out, no matter what the programs are at that time. "Prime time" is the evening hours when most people watch, regardless of what is on. The 10 most highly rated programs usually cluster closely together, seldom separated by more than 10 percentage points in their share of audiences (and, in fact, typically within the margin of statistical error). Unlike reading books and magazines or going to the movies, television viewing is more like a ritual. Production for television is a highly organized industrial activity, based on stable patterns of viewing and viewer inertia.

Cantor points out that continuing programs of standardized format are the backbone of television. The episodic series using familiar characters, themes, and plots, avoiding the jarring or unpredictable, are the most reliable in "delivering" the promised size and type of audience to the advertiser.

Cantor describes the centralized and bureaucratized nature of television program production. As the principal objective of television production is the marketing of products (even if its social functions are much broader), there is little room for other goals. That limitation explains the absence of free market in the conception and writing of ideas and their execution through casting, direction, and even the interpretation of roles. Cable, cassette, videodisc, and other new technologies may lead to some proliferation of production and some fragmentation of audiences but are unlikely to fundamentally alter the mass ritual that is over-the-air television. These new technologies are most likely to result in even more powerful, sophisticated, and profitable marketing of the products that now dominate television production.

Comstock, too, stresses the centralized nature of television production and its marketing orientation as he leads up to the subject of its impact on other American institutions. Many of these influences are incidental by-products of the principal marketing functions that the advertisers pay for, but they are of the highest public and personal significance.

Television has altered the pattern of family life and the process of socialization. It has reduced the time devoted to conventional religious practice but also spread the electronic gospel far and wide. It cultivates the norms of society by showing their frequent transgression, as in crime and violence, but at a price in aggression, insecurity, and social rigidity that some consider excessive. Yet, in its tendency to standardize and "homogenize" conceptions and behaviors, television also contributes to a certain type of social evolution.

It is not surprising that Comstock's review of research on leisure time pursuits finds television not only reshaping previous patterns but also changing the industrial landscape of other cultural institutions. Television has become the overall framework and "symbolic environment" within which all media operate.

Government, politics, and citizenship have not escaped the impact of television. Because of its pervasive influence, television has become the target of much organized pressure, including citizen groups.

All in all, this section reviews scientific progress in understanding how television works as an industry and as a social institution. The past 10 years seem to have brought research in these areas from infancy into adolescence. Lines of investigation have been established, and cumulative patterns of findings are becoming apparent. Seemingly unrelated results by independent investigators can now be integrated into models and theories that can be refined and tested as the field advances toward maturity.

Television and American Social Institutions

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The impact of television on American institutions and the American public has engaged the attention of social critics, journalists, politicians, social and behavioral scientists, and citizens for the past three decades. Because broadcasting systems differ markedly among societies, this examination begins with a brief characterization of American broadcasting. Then it embarks on a review of television's influence on several major institutions: family life and socialization; religion; laws and norms; leisure; public security; citizenship. Finally, it turns to the relationship that has developed between the American public and television and the public's evaluation of and opinions about the medium.

American Television

About 700 of the 950 American television stations are privately owned business ventures seeking a profit through the sale to advertisers of access to their audiences. The remainder are "public" television stations supported by contributions from private industry, foundations, governmental bodies, and the public itself. American television, however, in effect is synonymous with the broadcasting of the privately owned commercial stations. About 95 percent of the public's viewing is devoted to their programing. Because profitability depends on audience size, and entertainment typically draws larger audiences than would public affairs, informational, news, or instructional programing, American television is predominantly an entertainment medium.

The role of public television ostensibly has been to make available programing insufficiently appealing to a mass audience to be commercially viable, such as public affairs and children's programing. However, it has largely avoided programing appealing predominantly to ethnic minorities or to those at the bottom of the socioeconomic hierarchy, although such segments of the public are generally heavily reliant on television for entertainment and information, in favor of middle and upper intellectual minorities. Public television exemplifies by different dress the same imperative that governs commercial broadcasting—a wholehearted catering to the public from which it dependably draws its support and attention.

The three giant national networks—the American Broadcasting Company, the Columbia Broadcasting System, and the National Broadcasting Company—are the nervous system of American television. Just as American television is almost synonymous with commercial television, commercial television is almost synonymous with network television. Public television, too, has a national distribution system, and it fills additional time with local productions and individual purchases of programs, many of which are network "reruns."

The Federal Communications Commission (FCC), functioning under the authorization of the Federal Communications Act of 1934, literally determines the structure of American television by setting the rules to which broadcasters must conform. In principle, the FCC can revoke a license for failure to serve the public adequately, but in practice it has seldom done so. It requires a "reasonable" amount of news and community-oriented programing; and as long as this vague criterion is not scandalously violated, the renewal of a license is not in jeopardy. The agency is constrained both by the language of the authorizing statute and the free speech guaranty of the First Amendment from interfering in programing. Many believe that it could influence programing by increased scrutiny in license renewal, particularly under the rubric of increasing the diversity of programing available (Albert 1978; Krattenmaker and Powe 1978). The boundaries of its power are uncertain because they can only be determined by the test in court of actions which the affected broadcasters or other parties contest, and the FCC has displayed little eagerness to test these boundaries.

There are three exceptions to the principle that government policy has not been specifically directed toward influencing broadcast content. The "fairness doctrine" stipulates that broadcasters must give coverage to controversies of public importance and, in so doing, must encompass opposing viewpoints. The "equal time" provision stipulates that broadcasters must give equal access to candidates for public office, except in the case of "bona fide" news and public affairs coverage. The third has involved the Federal Trade Commission, which has had the power to police television advertising to protect viewers from deceptive and misleading claims. The Federal government has been a major financial contributor to public broadcasting, but its influence has been restricted, analogously to that over commercial broadcasting, to establishing the framework within which the endeavor takes place. Thus, the influence of the government over both commercial and public broadcasting has been immense and pervasive, but not specific, direct, or dictatorial in regard to program content.

Policy in regard to what will be broadcast as entertainment is set by the commercial broadcasters themselves. Policy is implicitly made in the many and varied decisions—by network standards departments—that lie behind the production of a particular program. It is explicitly made in the formulation and enforcement of codes to which broadcasters declare their allegiance in order to protect the industry from possible intervention by the government and harassment by politicians and the public (Larsen 1964).

The arbiter of commercial broadcasting is competition for the audience. It is audience size and character that determine the profit for the broadcaster, with size alone somewhat less important than attracting the viewers in the 18-to-55 age bracket that constitute the principal market for consumer goods. Such subservience to popularity stands in contrast to many national systems in which decisions over what will be broadcast are vested in a body assigned the responsibility of serving the public interest.

The majority of commercial programing is produced by organizations that, as the result of Federal antitrust statutes, are independent of the networks. The networks determine what will be produced, however, because they are the principal market for the programs. The exception to the separation of dissemination and production is television news and public affairs programing. Nevertheless, news is the creature of the goals of management, and, as in the case of entertainment, the priority is popularity, for it is popularity that will determine the price that advertisers will pay for the commercials that accompany news.

The "new technology"—cable television, pay television, satellite relay, cassettes, video discs, and in-home recording and playback—has the potential to increase the diversity of programing, but whether it will go beyond increasing the convenience with which viewers have access to what now is available is unclear. The new options involve the imposition of additional, possibly substantial, expense on the viewer. Thus, a situation is evolving in which there is likely to be a marked difference between the video environments of the affluent and the less affluent.

This leads to the issue of equity. If the new technology succeeds in making programing of superior quality available, substantial portions of the public will be excluded from it by their inability to pay. This may be tolerable for adults, but for children and young persons, national policy in a somewhat comparable arena, education, has been devoted to eliminating inequities. If the new technology appears to be providing superior educational, cultural, and entertainment programing for young persons, there will be the dilemma of two national modes of communication on two divergent and inconsistent paths.

There is, finally, the question of the impact of the new technology on broadcast television. While cable may not divert audiences sufficiently to render network and broadcast television unprofitable (Park 1979), it certainly will reduce the broadcast audience, removing those consumers whose attention is most sought after by advertisers—the affluent; the dollars that broadcasters can extract from advertisers for access to the audience will become fewer as the audience decreases in size and quality. Broadcasters in turn may become anxious to attract audiences by any means, thus more exploitive of violence, sexual provocativeness, and the more venal aspects of men and women, and they may become even less motivated to experiment with programing possibly marginal in popularity.

Family Life and Socialization

Television's presence in the American home has brought many changes to family life and the rearing of children. They include new patterns of interaction, the alteration of activities, and vicarious socialization.

New Patterns of Interaction

Films of families viewing television document that, now that the medium is commonplace, viewing is typically discontinuous (Allen 1965; Bechtel et al. 1972). It would be a mistake, however, to conclude that television is irrelevant to the life lived around it.

The large number of hours that the set is on each day in the average household makes television the framework within which human interaction occurs. The scarce data reveal that television has reduced time spent in conversation (Robinson 1972*b*; Szalai 1972), giving support to the speculation that it reduces interaction among family members. The same data also support the speculation that viewing increases the privatization of experience; those whom television brings together it isolates through attention to the screen. Almost half of American households have two or more television sets; their effect is to further increase the privatization of experience and to alter the social aspects of viewing. The consequence is to further the separateness of adult and child experience.

There are, however, numerous instances when family members do view together and must decide on what to view. A fairly consistent composite of the dynamics of this decisionmaking emerges (Bower 1973; Lyle and Hoffman 1972; Wand 1968). Disagreement is fairly frequent, and children prevail almost as often as adults. Otherwise, decisions follow the norms of society and majority rule: Fathers tend to prevail over children and mothers; older children over younger; and among adult couples, males over females. The most striking aspect is the emergence of the young as arbiters of household behavior.

Alteration of Activities

There is little doubt that the amount of time spent viewing television has altered activities in the home. When television was first introduced in England, it appears to have reduced among adults both expressed interest in and engagement in various activities and hobbies (Belson 1959), but with the passage of several years these activities appeared to be returning to pre-television levels. Those activities most frequently engaged in prior to television remained affected, however, and after 6 years still had not returned to their pre-television levels. Television also appeared to reduce time spent in child care, to increase time spent at home in the evening, and to reduce differences in the pattern of home activity among socioeconomic strata (Belson 1960). The implication is that in the television age, the home in which the child grows up offers fewer and less forceful examples of activities, other than immersion in the mass media, in which he or she might engage.

One cannot be certain that these data apply to the United States, but it is plausible to believe that they do. None of the effects was large. They do suggest, however, that television is not simply an addition to the household but the source of some alteration in the pattern of life.

Vicarious Socialization

Some have argued that television is a source of vicarious socialization that competes with parents, teachers, and other acknowledged agents of socialization in providing models for emulation and information that influence individual beliefs, values, and expectations (Bandura 1969). The evidence for this proposition is convincing. What is uncertain is the degree of its influence and whether that influence is positive or negative.

One strand in this evidence is the amount that children view and the content itself. Children typically are heavy viewers, and most of their viewing is of general audience or "adult" programing. Television presents the viewer—particularly a child, whose experiences and knowledge are limited—with a world that is often at variance with the one he or she inhabits, so what television conveys often has no corrective in actual experience. The effect has been to remove from parents control over the introduction into the home of information. Thus, television has the potential to supplement as well as to reinforce other agents of socialization.

A second strand consists of studies of the information itself that children derive from television. Television begins to socialize children to a world where celebrities figure prominently (Schramm et al. 1961). Children have been found to perceive occupations with which they are personally unfamiliar as they are portrayed on the television they view, while perceptions of occupations with which they have actual experience are not as similar to their portrayals on television (DeFleur and DeFleur 1967). Television was the major source of children's knowledge about the Viet Nam war and more important as an information source than parents or teachers (Tolley 1973). Black youths are more likely than whites to report that they obtain ideas for dating from television (Gerson 1966). Blacks and children from families of lower socioeconomic status more frequently report that they use television as a source for learning (Greenberg and Dervin 1970). The common element to these findings is the reliance on television for information not available in the child's own environment.

The third strand is made up of several dozen laboratory-type experiments demonstrating that the observation of the performance of an act by a person in real life or on film or television increases the likelihood that children subsequently will themselves behave in a similar manner (Bandura 1973; Bandura et al. 1963). Even if the children do not spontaneously perform the act, they can do so on request, indicating that observation of behavior can alter capability of subsequent performance (Bandura 1965). The implication of these experiments is that television can alter the repertoire of possible behavior on which children will draw in a future situation.

The fourth strand consists of another several dozen laboratory-type experiments demonstrating that the level or intensity of performance of an act by youths of college age can be increased by exposure to television portrayals. In some of these experiments, performance apparently has been augmented by lowering inhibitions or otherwise facilitating behavior (Berkowitz 1962, 1973). The implication is that television may alter the behavior that real-life experience subsequently negatively or positively reinforces, thereby contributing indirectly to the future pattern of behavior.

The broad implication of the two experimental strands is that there are a number of psychological processes by which television may influence subsequent behavior.

The socializing influence of television is subject to modification by other agents. Although television was found to be the principal source of children's knowledge about Viet Nam, opinions about the war were found to be primarily influenced by parents, and the viewing of television news was found to be increased by parental interest in the war (Tolley 1973). Parental support for aggression as a means of problem solving has been found to have greater influence on attitudes favorable to the use of aggression than the viewing of television violence (Dominick and Greenberg 1972), and when parents deemphasize aggression for problem solving, the correlation between the viewing of violent television and aggressive behavior is sharply reduced (Chaffee 1972; Hicks 1968; Lefcourt et al. 1966; McLeod et al. 1972). The implication is that to some, possibly a great, degree the socializing prowess of television depends on the lack of intervention by nonvicarious agents, such as teachers and parents.

What is not known are the magnitude of television's effects, the relative size of its influence compared to that of other socializing agents, and, outside of aggression, the principal areas of impact.

Religion

The relationship between the institutions of mass communication and religion has received almost no attention from social and behavioral scientists. Gerbner (1967) pointed out that religion, education, and mass media are all systems by which the public is acculturated, or introduced to the norms, conventions, and taboos of society. What sets religion and mass media apart is their continuing, repetitious presence throughout life.

The scant evidence available is that television has reduced the amount of time devoted to conventional religious practices (Robinson 1972*b*). The medium is one of many influences in modern society that promote secularization and the lessened prominence of long-established ceremony and ritual.

A more obvious effect in the United States is the broadcasting of religious services. The Sunday morning adult audience for religious broadcasts averages 13 million, a crude datum that nevertheless reinforces the impression that religious television reaches a sizable number of persons. What meaning is to be attached to the phenomenon of religious television? Surely some viewers find it difficult or impossible to attend a local service, or can find none to their taste, while others choose television in place of the service they would otherwise attend. Still others may find in televised preaching something more to their liking than they found in a church; religion on television has more in common with the entertainment to which the medium has accustomed the public than the typical church service has. Thus, it is moot whether television's net effect in the United States has been an addition or reduction in the proportion regularly attending to religious services.

Gerbner (1976) suggested that television in the United States can be looked upon as an institution that has assumed some of the functions of a dominant religion and thus might be thought of as the successor to conventional religion. Television particularly resembles religion in that the basis of its economic power is the acceptance of its communications by the intended audience. Television also would appear to resemble religion in the communication of values and interpretations of the world. Television does not do so explicitly as does religion, except in religious and other exhortatory programing, but implicitly. For example, it has been argued that television drama as a whole presents, through its violence, a text on the attributes associated with success, power, and dominance, or their absence, and through the high frequency with which persons fall victim to the hostile and dangerous nature of the world (Gerbner and Gross 1976). Similarly, the attributes of figures chosen to appear as entertainers, newscasters, or the subjects of interviews in a favorable context are implicitly identified as the equipment of prominence and success.

The connection does not end with the disseminataion of values. Television's preeminent figures—in news, public affairs, and talk-show programing—function much like priests in guiding those who attend to them to people and things fit for their scrutiny. In this respect, television has joined religion and the rest of the mass media in becoming an arbiter of social merit and societal prominence and importance.

Laws and Norms

The purpose of laws and norms in a society is to resist change and disruption and maintain social relations in their current manifestation. Many questions have been raised about the contribution of television to such enforcement in the United States.

The issue that has drawn the most attention has been the possible contribution of violent television entertainment to delinquency, crime, and other seriously harmful antisocial acts. The acceptance of such a proposition is contingent on the assumption that television's demonstrated contribution to aggressiveness augments the frequency of serious transgression. It is more respectful of the limitations of the evidence from American experiments and surveys to argue that seriously harmful antisocial acts are somewhat shaped by television, because such a viewpoint accepts the ability of television to enhance capability to perform an act by providing a model without requiring that it overcome major psychological and social restraints.

There have been just a few instances, in which some link between exposure to television violence and serious, criminal antisocial behavior could be subjected to examination. One is the survey of media behavior and delinquency among 1,500 London male adolescents by Belson (1978); another is the field experiments reported by Milgram and Shotland (1973). The latter found no influence of exposure to a *Medical Center* episode in which a theft from a plastic charity box was portrayed when viewers some days later were craftily given the opportunity to commit a similar act. The barrier to accepting such evidence as conclusively demonstrating null social effects of television violence is that a very serious threat to social well-being would be posed, even if one out of each million viewing a prime time episode were shifted across the threshold of minor criminality, although such a rate of effect would be well below that detectable in an experimental design (Comstock 1974).The media effect put to test, in short, would appear to well exceed the sensitivity of the chosen design. When such is the case, the alternative is to test propositions consistent with the supposedly untestable proposition. This in effect is what has occurred in the experiments on violence viewing, which demonstrate a number of ways in which violent portrayals may increase subsequent aggressiveness, and the surveys that provide positive correlations between prior violence viewing and aggressiveness. Belson's data, on the other hand, extend the demonstration of a positive association between violence viewing and aggression in the American surveys to acts much more serious and threatening in their antisocial character. In addition, there have been the instances in which singular portrayals appear to have led to antisocial acts like those depicted—the most notable the increase in airline bomb threats that have followed broadcasts of the Rod Serling play, *Doomsday Flight* (Bandura 1973). Thus, the American experiments and surveys suggest that violence viewing encourages aggressiveness that might be translated into serious antisocial behavior, and the English surveys and various real-life events give some support to the belief that such a translation in fact occurs.

Several writers have argued that television is a powerful reinforcer of the status quo (Clark 1969, 1972; Gerbner and Gross 1976; Gerbner et al. 1979). The ostensible mechanism is the effect of its portrayals on public expectations and perceptions. Television portrayals, particularly violent drama, are said to assign roles of authority, power, success, failure, dependence, and vulnerability in a manner that matches the real-life social hierarchy, thereby strengthening that hierarchy by increasing its acknowledgment among the public and by seldom providing positive images for members of social categories occupying a subservient position (Comstock 1972*a*, 1980; Gerbner 1972; Gerbner and Gross 1976; Gerbner et al. 1979; Head 1954; Katzman 1972; Long and Simon 1974; Seggar and Wheeler 1973). However, the proposition that television reinforces the status quo must remain speculative. As Gerbner and Gross (1976) observe, the proposition is so wholistic that it is somewhat like asking about the effects of Christianity, Confucianism, or the automobile.

It has also been argued that television contributes to a homogenization of norms. One of the attributes of a television society is undeniably a historically unprecedented sharing of the same experience. Although amount of viewing and attitudes toward television do vary by social strata, with viewing and favorability of attitude inversely related to education, viewing is sufficiently similar for all for television to be considered a national experience (Bower 1973; Comstock et al. 1978).

The arguments about television's contribution to the status quo, homogenization, and assimilation of various segments of the population to middle-class norms and values revolve around the heterogeneity of society. The first holds that television strengthens the current social hierarchy; the second holds that television reduces differences among strata; and the third holds that changes in the norms and values of particular segments are the means of that reduction. Since attention to a common source of diversion, and the consequent increase in adherence to certain values and norms, would not in fact erase the very real social distinctions and opportunities rooted in education, income, occupation, and ethnic and family background, it is eminently possible that all three are occurring simultaneously. By increasing acceptance of the norms and values on which the hierarchy is based and on which it depends for its orderly functioning, homogenization and the assimilation of disparate groups to middle-class norms and values in effect would augment the strength of that hierarchy. The status quo would be strengthened, and thus these three concepts align themselves in congruence and not in conflict in their social import.

If this view is valid, one function of television in the United States is to ameliorate the stresses and conflicts that ensue from the operation of the social hierarchy at the same time that other, contrary effects occur. Television violence apparently encourages aggressiveness and may contribute to the disruption of the social order; the emphasis of television on worldly goods may stimulate dissatisfaction with the social hierarchy and also may contribute to the disruption of the social order. These disruptions, ironically, may strengthen the support of the public for statutes and agencies concerned with the control and suppression of social deviance, thereby reinforcing the status quo. Thus, some of the liberal lessons that television teaches are contravened by its influence on behavior. Nevertheless, it would be an error to think of television as not contributing to social change and evolution, for that is what homogenization and assimilation represent.

Leisure

Television has profoundly changed American leisure. It has markedly affected not only the way Americans allocate their time but the options available for that allocation.

For an understanding of the impact of television on daily life in America, a major debt is owed to the extraordinary UNESCO study of the way time is spent in modern society. Diaries of 24-hour time allocations were obtained in 1965 from large samples of employed adults in 15 industrialized cities in the United States, Western Europe, and Latin America, representing 11 countries (Robinson 1972*b*; Robinson and Converse 1972; Szalai 1972).

Television has increased the time Americans spend on the mass media by 40 percent, an increase of about an hour per day. However, three-fourths of the time spent on the mass media is devoted to television. A third of leisure is devoted to viewing as the primary activity. Television ranks third behind sleep and work as a consumer of time. What must be realized in evaluating these figures is that they represent a large, historically unprecedented step in the centrality of the mass media in modern society. Mass media, because of television, have become more prominent, with the result that the symbols and messages common to mass media have become more pervasive and fewer are likely to escape them; and because television has become what it is in America, those symbols and messages are even more predominantly than ever before representations of entertainment and the currency of popularity.

Data from studies of the adoption of television in the United States (Bogart 1972; Coffin 1955), and comparisons in the UNESCO study between set owners and nonowners in societies where ownership had not reached the saturation of the United States indicate that the time spent on television represents reductions in time that in the absence of television would be spent sleeping, at social gatherings away from home, in radio listening, in magazine and book reading, in movie going, in conversing, on household tasks, and on miscellaneous leisure activities.

The impact of television on time allocation should not be construed as equal among social strata and population segments. The extensive viewing typical of all strata and groups makes television a national medium, but there are differences. The gross impact certainly has been greatest for those of lower socioeconomic status—blacks, women, and the elderly—because they view more (Bogart 1972; Bower 1973; Comstock et al. 1978; Greenberg and Dervin 1970; Robinson and Converse 1972). However, the character of certain of television's effects suggests that those of higher socioeconomic status have in certain respects been more severely affected, because it is such persons who were the largest patrons of the media whose use has been diminished by television.

The relationship between blacks and television is remarkable. Blacks not only view more than whites, but the inverse relationship between education and both viewing and favorable attitudes toward television that holds for whites is, depending on the measure, either not present or sharply reduced (Bower 1973). Since the introduction of television, blacks have become more strongly oriented toward it as a source of political news than whites (McCombs 1968). The explanation for the unusual affinity of blacks for television is unclear. Factors possibly responsible are the concurrence of the rise of television with the civil rights movement and the dissatisfaction of blacks with their treatment in newspapers and magazines (Baker and Ball 1969; Lyle 1967; National Advisory Commission on Civil Disorders 1968; National Commission on the Causes and Prevention of Violence 1969); the greater reliance by blacks on television as a source of information (Comstock et al. 1978; Gerson 1966; Surlin and Dominick 1970) about the larger society in which they desired to participate more fully; the somewhat greater degree to which leisure would be perceived by blacks as less available to them; and the possibility that higher education for many blacks does not reflect the same affinity for the culture embodied in print media as it does for whites. There is also the self-hate hypothesis (Gerson 1966), which holds that blacks are motivated to immerse themselves in the white-dominated world of television to learn how to act like whites. Each is plausible, and each probably has had a role.

The phenomenon of television has done more than alter the way Americans allocate their time. By affecting the allocation of time, it has affected the economic viability of other media and activities, stifling some and leading to the reshaping of others in the attempt to meet television's competition. It has also probably promoted interest in various activities. The result is a marked alteration in the leisure options open to Americans.

Television severely reduced the audience for movies (Bogart 1972). Equally important, it has probably contributed to the increase of violence and frank treatment of sexual themes in theater films. A partial explanation is certainly the competition between movies and television, with moviemakers employing the predictable means of telling stories in ways less acceptable in a medium that functions in the living room. Television also appears to have brought about the demise of such mass-audience periodicals as the *Saturday Evening Post*, *Collier's*, and *Look* by reducing the time readers devoted to them, and at the same time it provided a new and apparently superior means by which advertisers could reach consumers. Magazines devoted to special interests prospered because they served interests incompatible with the character of television and because television's effects on the general-audience magazines released the dollars that had been spent on them. The sale of comic books decreased from about 600 to 300 million between the early 1950s and 1970. In book publishing, fiction, poetry, and drama declined in the same period from 22 to 13 percent of all commercially published titles in retail outlets, although the absolute number of such titles increased. Similarly, the availability of television led to a reduction in library circulation that was several times greater for fiction than for nonfiction (Parker 1960, 1963). Television converted radio from a national to a local medium. Before television, the major radio stations carried the news and entertainment of three networks to a heterogeneous audience, much as major television stations do today. Now, radio is a largely local medium in which each station typically caters to a relatively homogeneous audience; there is some news and talk programing, some comedy and even a little drama, but radio today is overwhelmingly a vehicle for recorded music, with each station specializing in a particular species intended to appeal to a particular segment of the public.

These effects should not be interpreted as solely the result of television consuming time that might otherwise be spent in such pursuits. It is more plausible to interpret them as partly the result of television performing for its audience the same functions or services more economically and conveniently (Himmelweit et al. 1958; Schramm et al. 1961) and, in such instances as the mass audience periodicals, absorbing advertising revenues that would be devoted to media other than television.

Until the 1970s, per capita daily newspaper circulation kept pace with population growth. Then, in the 1970s, per capita newspaper circulation began to lag. The contribution of television to this trend is uncertain, but it is plausible to think that it reflects the growing proportion of persons who grew up with television, many of whom look upon it as the principal medium for entertainment and news and some of whom may consider it the sole medium worthy of attention.

Television has also reshaped the other media by the opportunities it offers for the wider and more profitable dissemination of their products. The potential sale of television rights has become a factor in estimating the profits from movies and novels, and the suitability for promotion on talk shows has become something publishers take into account in deciding what and whose work they will publish. In the case of movies, there are few, if any, that cannot be transformed in the cutting room to satisfy the anxiety of broadcasters over giving offense by explicit sex or violence, but the result is an excision that is artistically, and thus morally, damaging. In the case of publishing, television has been one of the factors responsible for raising the stakes that can be achieved by an outstanding seller and for converting bookstores into marketing outlets indistinguishable from one another across the shopping malls.

Leisure options outside of the media have similarly been reconstituted by television. It, in effect, demolished minor league baseball—attendance fell from 42 to 10 million during the two decades ending in 1970—through its attractiveness as home entertainment and its presentation of major league baseball and other sports (Bogart 1972).

The influence of the broadcasting of events is not easy to gauge because of the many factors involved. It may harm a sport or other activity by keeping devotees at home through television coverage. At the same time, it bolsters that sport or activity when fees for coverage are paid by broadcasters. It increases public attention to any sport or activity to which it gives coverage, and thus it has undoubtedly increased attendance at some sporting and certainly many cultural events. This produces a delicate balance in which the benefits of television coverage continually threaten the events given exposure. Television coverage has certainly made football the principal national spectator sport, yet colleges and owners of professional football teams are continually concerned over the possibility that coverage will decrease paid attendance. This concern has led to the "blackout" or nonbroadcasting of games within the radius of the site, and a measure of the importance the public attaches to the diversion of televised football is the passage by Congress of a law prohibiting blackouts if a game is sold out. The power of the medium is perhaps most persuasively exemplified by its creation of a new national holiday in *Super Bowl*, an event whose broadcast so thoroughly impinges on American life that the *New York Times* perceives the behavior of the Nation on this day as worthy of attention on its front page.

Public Security

In Haskell Wexler's fact-based film about the 1968 Democratic convention in Chicago, *Medium Cool*, street demonstrators chant, "The whole world is watching! The whole world is watching!" while being filmed by television news crews. On February 2, 1968, NBC televised in color the assassination on a Saigon street of an unarmed prisoner of war by a South Viet Nam general, and some consider the reaction to this 4 minutes of footage to be the turning point toward public opposition to the war (Bailey and Lichty 1972). What these diverse incidents draw attention to are the possible effects of particularly dramatic coverage by television news on subsequent events.

One of the phenomena of modern life is the tendency of terrorist acts and outbreaks of violence to occur in a series. One factor in the clustering of such events is probably the coverage given them by the mass media. It would be silly to hold television responsible apart from other mass media, since the values expressed in television news derive largely from the values of journalism as a whole. Nevertheless, it is possible that in certain instances television may have a particularly strong role in any such effect.

Television coverage has become the most clear and obvious symbol of wide public attention. Thus, television coverage may encourage similar acts because the initial coverage appears to ensure subsequent attention by the medium. At the same time, television coverage may provide useful clues for the commission of such acts. The apparent contribution of the *Doomsday Flight* drama to a subsequent increase in airline bomb threats gives some credence to this view.

Television coverage may also influence the way events unfold. The access to public attention implied by television may distort the decisionmaking and behavior of those involved. In some cases, it may restrain behavior by the apparent guarantee of exposure to public scrutiny. In others, it may exacerbate dreadful events by giving participants a sense of playing roles in high drama.

"The whole world is watching!" This phrase implies another way in which television may shape rather than report events. Television coverage itself may be the goal in a particular instance. It is a standard tactic for disaffected groups to seek public sympathy through publicity or the provoking of violent reprisals in which they appear to be innocent parties. Thus, television exposure may be the calculated outcome rather than the concomitant of organized displays of dissatisfaction and unrest.

Effects of this kind are contingent on presumed reactions of viewers or of officials to the exposure of the public to such events. When General Westmoreland returned after the American withdrawal from Viet Nam, he declared that television had made war untenable to the public because of the graphic display of its ugliness. Although one must be skeptical about television making war less likely, it is certainly conceivable that the expectations of officials about the public reaction to television coverage may enter into their decisionmaking. It has often been said that television drama sanitizes violence by avoiding gruesome consequences; it could also be argued that television news desanitizes war.

These varied possible effects of television coverage raise important issues for new policy and ethics. It is a myth of the mass media that events determine news. News depends on events but is determined by the interpretation and value given them by newsmen. If news coverage influences events, then questions are inevitably posed about the actions or the propriety or necessity of newsmen who, in effect, become responsible for that influence.

Citizenship

There are numerous examples of occurrences that are thought of as television events because the medium has so vividly brought them to the public. They include the space shots, the funerals of John and Robert Kennedy, the Watergate hearings that led to Nixon's resignation, the long counts in 1968 and 1976 before the presidential winner became clear, and the nominating conventions and the presidential campaigns themselves. The debates between the presidential candidates in 1960 (Kennedy vs. Nixon), in 1976 (Carter vs. Ford), and in 1980 (Reagan vs. Anderson; Reagan vs. Carter) not only exemplify the prowess of the medium in drawing public attention to an event but in effect were "events" whose occurrence depended on the existence of the medium. There have been numerous documentaries covering such topics as the treatment of migratory farm workers, health care, Pentagon policy, and violence in American society. All of these are in addition to the medium's continuing daily coverage of national and local news.

Americans perceive television as their primary news source. When asked to evaluate the various media, they rank television as the most comprehensive, useful, credible, and relied upon of all the media (Bower 1973; Mendelsohn and O'Keefe 1976; Roper 1979). There is good reason to believe this represents an expression of television's symbolic importance more than actual behavior in using the media as sources of information. First, half of American adults see no portion of any national news program in any given 2 weeks, and more will see a newspaper in the same period than will view any part of a national newscast (Robinson 1971). Second, a different picture emerges when people are queried about local, regional, and national events rather than just about "news," for then newspapers increase in importance for regional news and generally become predominant for local news (Comstock et al. 1978; Levy 1978; Roper 1979). Third, the average audience for national television news is smaller than the average audience for any of the evening entertainment programs and has a higher proportion of viewers 50 years of age and over—so one must be wary of confusing its prowess in entertainment with its effectiveness in news delivery. The sole dimension in the public opinion data that does not reflect an exaggeration of television's status is credibility (Carter and Greenberg 1965), an advantage that viewers attribute to the medium's visual properties, primarily the use of film to display events and the presentation on camera of the persons reporting the news.

The preeminence of television appears to be subscribed to by politicians, who complain frequently of their treatment and of alleged bias in reporting. They are, in fact, probably justified in ascribing great importance to television. One reason is the greater credibility possessed by television. Another is the average nightly news audience of 50 million persons, many of whom may not employ other sources for news, which is a substantial portion of the public, and television, with its three networks, approaches a single means of gaining their attention. A third is that television, by displaying the man or woman whole, in action, is particularly powerful in confirming tentatively held impressions, so that when these are favorable, the medium can reinforce existing support (Lucas and Adams 1977). A fourth rests in the very fact of television's importance as a symbol, for coverage by television, whether visual or not, has become one of the means by which a public figure achieves legitimacy as someone to be contended with and to whom attention should be paid.

It is widely agreed that television has reshaped American politics by the ways in which it has affected the behavior of politicians and the conduct of political campaigns (Lang and Lang 1968; Mendelsohn and Crespi 1970). Examples include the devising of campaign strategy to maximize favorable exposure on television, the heightened importance of communications and advertising experts in the mapping of campaigns, and the devotion of major portions of campaign budgets to television. In addition, through the enormous journalistic forces that it deploys, television has largely removed the suspense from any vote. As a result, the parties have turned to the devices of show business to hold the attention of viewers. Television has also been a factor in narrowing the options open to a convention. By its close attention to the primaries, and its emphasis on winners and losers, television has helped produce the situation in which, by convention time, the field is generally narrowed to one or two contenders. The attention that television gives to the primaries is a function of the competition among the three networks, but it has achieved its importance through their ability to reach the public at large; what was once a State or regional event has become a national event. At the same time, the number of primaries has doubled, itself in part a response to the attention given them by television. Thus, presidential selection stands in sharp contrast to what often took place before television, when many men remained as potential candidates until convention voting concluded.

Nevertheless, television coverage during an election campaign does not seem to play a large role in shifting voter allegiance from one candidate to another or in directly influencing voter choice. The reasons include the fact that many voters—in the typical presidential election of the past, about 80 percent—reach a decision early in the campaign before there is much exposure to campaign-related television; the allegiances or predispositions toward one of the parties; the ability of people to assimilate, reject, or ignore information contrary to their viewpoint; the relatively balanced exposure to information about competing candidates; and the consistency with which choice of the candidates has been associated with the interests and experiences represented by socioeconomic status, race, and geographical place of residence. Television's role is to sharpen, crystallize, and reinforce decisions and inclinations (Comstock et al. 1978; Klapper 1960; Mendelsohn and O'Keefe 1976). Its extensive political coverage alerts the Nation to the forthcoming political choice. In this respect, it certainly performs a major and important task.

However, the demand of television for visually interesting content—such as welcoming parades, handshaking, and the consumption of ethnic foods by candidates—and the limited amount of time available for a story deters extensive attention to issues, and it is therefore not surprising that two political scientists should report that they found no relationship between the exposure of voters to network news and their knowledge of the issues and candidates in a presidential contest (Patterson and McClure 1976). Thus, the property that gives television news its credibility inveighs against its effectiveness in conveying information that might gain in influence from that credibility.

This characteristic of the medium has two consequences. First, when the image of a candidate is crucial to voter decision, television probably has more potential for influence than other media. Second, because of the event-and-image bias of television news, political advertising has a comparative advantage in conveying information about the positions that candidates hold on the issues. Brief, paid-for political statements will reach more viewers, because they are not avoided by entertainment seekers, and when two circumstances join—voter ignorance about the position of a candidate and the centrality of issues to voter decision making—such telecasts have the potential to be very influential. But the practical opportunity for impact may be confined to a modest segment of the voting population; in a mid-America sample in the 1972 election, those who believed they had been influenced by commercials were limited to about 1 out of 10 who were younger, educationally nonmobile, low in socioeconomic status, politically ignorant, high in exposure to media campaign coverage, and oriented toward television rather than newspapers for political information (Mendelsohn and O'Keefe 1976).

Voters consistently cite television as their principal source of news in a presidential election (Mendelsohn and O'Keefe 1976), but this declaration merits the same discount as does the importance ascribed by the public to television news in general. Newspapers are the preferred medium of the better-educated, professionals, and white-collar workers, and these segments of the public are those most likely to vote (Comstock et al. 1978). Newspaper reportage appears to be more effective than television news in making voters aware of specific issues, shifting issues to a greater or lesser prominence on the public's agenda of perceived importance, providing information that those attending to news accounts remember, and serving as the basis for fact-based decisionmaking by voters (Clarke and Fredin 1978; Comstock et al. 1978; Patterson 1980; Weaver and Buddenbaum 1979). The editorial endorsement of a candidate by a newspaper, a practice in which the networks do not engage, also appears to influence the way its readers will vote (Kraus and Dennis 1976; Robinson 1972*a*).

Nevertheless, there is evidence that television may perform at least one function in voter decisionmaking not performed by newspapers when there is a high degree of voter uncertainty. Lucas and Adams (1977, 1978) found in a panel of Pennsylvania voters in the 1976 election that early- and late-deciders were alike in newspaper exposure but differed in that early-deciders engaged in greater interpersonal communication about the election and more frequently viewed network news. Because belief or confidence about being informed, but not political knowledge, was also correlated with reaching an earlier decision, it is reasonable to conclude that personal communications and television had a functionally equivalent effect through authenticating impressions rather than providing information. This is an example of reinforcement, but of a kind for which television may be particularly effective and in circumstances in which reinforcement plays a crucial role in the consummation of the electoral process.

The influence of television is probably greatest in the presidential primaries and in races for the House and the Senate. Paid-for political spots and brief broadcasts, as well as coverage by television news, can gain familiarity and support for a candidate, as exemplified by the fact that primaries are generally won by the candidate spending the most money (Emery 1976). Nevertheless, the greater degree to which the public cites newspapers as their source of information about House and Senate contests suggests that the influence of television news at these levels is probably minor (Roper 1979).

In the empirical examinations conducted to date (Fuchs 1966*a*, 1966*b*; Lang and Lang 1968; Mendelsohn 1966; Tuchman and Coffin 1971), projections of the presidential winner based on eastern voting did not affect voter choice or turnout on the West Coast, where polls close later because of time differences. In the instances examined, the projections paralleled estimates based on national polls, and thus the "news" was not new but in accord with information that West Coast voters presumably would have taken into account in their decisionmaking. Consequently, these studies have little to say about what might occur were the expectations of voters not confirmed by early projections and whether there would then be changes in voter intentions, especially in regard to turnout, that might affect close Senate, House, State, and local races even when West Coast voting was irrelevant to the presidential outcome.

Presidential debates stand apart from television's continuing news coverage but hardly from the medium itself, of which they in effect are the creature. Extensive empirical evidence is available on the 1960 and 1976 debates (Comstock et al. 1978; Dennis and Chaffee 1978; Dennis et al. 1979; Katz and Feldman 1962; Kraus 1962, 1979; Sears and Chaffee 1979). Although marked shifting of the electorate as a consequence of exposure to the debates was not documented, intensity of support for those who might be expected to vote for one or another of the participants was affected, and, while the specific vote registered by an individual on election day has rarely been traceable directly to the debates, they clearly served to stimulate voter reflection and decisionmaking. Certainly selective perception occurred, as exemplified in opinions about which candidate won and the importance assumed by issues considered to be beneficial to one or another of the participants. Nevertheless, voters not only perceived the debates as helpful, but those who attended to them appeared to change more frequently in attitude and choice; thus, the mental processes of voters would appear to confirm their declarations of assistance. Whatever their shortcomings as intellectual confrontations, the debates helped some voters distinguish among the candidates in regard to their positions on issues while at the same time made the less-preferred candidate somewhat more acceptable; they made some contribution to clarity and ameliorated—at least transiently—national discord, once the election was over.

The designation of "winner" is an accolade bestowed by a few, for it derives from a plurality of only a few percentage points among viewers immediately after each event, with as many as a third or more typically perceiving each encounter a draw. Thus, these 1960 and 1976 debates had three characteristics: (1) a series of encounters; (2) a schedule well in advance of the election, with the first debate occurring in late September and the last at least 2 weeks before election day; and (3) a rough parity of performance. Such conditions minimize the likelihood of an impact strongly favoring one or another participant, for there is time for other influences to intervene; especially when the initial encounter is the most influential, an opportunity occurs within the series to recoup, and either voter support is likely to be reinforced or gains for one offset by gains for another.

Sixteen years elapsed between the first and second debates. The encounters in 1980 increased the likelihood that such events will become an institution, for it will now be more difficult for a candidate to refuse to participate without suffering public disdain. Whether scholarly, empirical analyses of the 1980 debates will alter the impressions gained from those of 1960 and 1976 remains to be seen; but if televised debates become a regular part of presidential politics, they will constitute another change in public life attributable to the medium.

Thus, on the whole, the evidence favors a tempered perspective on the influence of television in the electoral process. Much of the same must be said about newspapers, although in most respects they have been more prominent than television in entering into voter decisionmaking. There are historical trends, however, that imply a greater influence on the part of the mass media in the future than has been the case in the past (DeVries and Tarrance 1972; Dreyer 1971; Kraus and Dennis 1976; Nie et al. 1976). The number of voters not aligned with any party has been increasing, and faith in the party system and in politicians generally has been declining, shifts in which Watergate was simply a prominent punctuation mark in a long-term trend; and the reliance of voters on issues and ideology instead of the party identification of a candidate has been growing. These trends are exemplified by increases in the proportions of voters who consider themselves as independents and in the proportions who split their tickets among candidates of opposing parties. Within each party, the proportion who hold liberal or conservative—as contrasted with centrist—positions has been increasing. These varied circumstances imply a politics in which information plays a greatly enhanced role, and reinforcement and crystallization, in the sense of the cultivation of prior party loyalties, presumably would have a reduced role. They also imply a politics that is volatile, with uncertain voters perhaps becoming the norm rather than the exception. These are circumstances in which the influence of the mass media is likely to grow. What is problematical is the precise place that television campaign coverage and television news will come to assume in future politics. Its secondary status to newspapers may change if declines in newspaper readership and circulation continue, and the major challenge that it will face lies in its disinclination, rooted in its loyalty to the emphases in coverage that seem most likely to ensure popularity, to deal with the issues instead of the drama of politics.

The Public and Television

The principal motive of Americans for viewing television is entertainment. Three times as many Americans say they watch for entertainment or relaxation as those who view merely for "killing time," and few say they are motivated by a desire to be informed or to learn (LoSciuto 1972).

Television is also to a great extent approached as a medium rather than as a supplier of specific programs. People seldom specify the desire to see a particular program when asked about their reasons for viewing at a particular time, although about three-fourths affirm that the desire to see a particular program was a motive when the question is phrased that way, and about a third acknowledge that what they view is determined by the channel that happens to be on or that someone else is watching (Robinson 1972*c*). Although it would be an exaggeration to say that all television is watched with passive indifference—an interpretation contravened not only by the sizable differences that occur in the ratings for different programs broadcast at the same time, but also by the convincing demonstration by Frank and Greenberg (1980) that the mass audience can be broken down into groups that are distinctly unlike in demographic characteristics and interests and which seek out different types of programs—it is not to say that it is frequently attended to in stretches of time. Thus, viewing involves two decisions—to view and what to view—and of these the former is typically the decisive factor in whether television will be viewed.

The public's evaluation of television is predominantly favorable. When asked to rate television on various dimensions in which a positive or negative response was unambiguous, a majority of the public in 1970 ranked television in a favorable way (Bower 1973). Nevertheless, there was a decline in favorability from the public's rankings a decade before (Bower 1973; Steiner 1963). It appears that with greater familiarity with television and increased use, the public's expectations and demands have somewhat exceeded television's ability to meet them, but it appears that this discrepancy has not become sufficient to affect viewing. Television's hold on its audience is a tribute to the cybernetic effectiveness of its system of feedback by audience measurement, which leads to the elimination of programing that is not maximally popular. Thus, television is the ultimate mass medium not only by the size of audience, the reaching of the Nation as a whole with its messages, and the speed by which it communicates to extremely large numbers but also by its symbiotic attachment to mass tastes and values.

The medium arouses hostility by its attraction to visually exciting events that may offend, disturb, or irritate the public. About half of the public in 1970 believed that the increase in live coverage of riots and protests over the preceding decade was a "change for the worse," while only a third believed that it was a "change for the better" (Bower 1973). Some of those who are dissatisfied are undoubtedly responding to the disagreeableness of the events, while those who are satisfied are responding to television's reportorial efficacy, so that confusion of image with reality probably dictates some degree of the dissatisfaction expressed by the public.

About half the adult public over the past two decades has believed that children may be exposed to portrayals that in some way are undesirable (Bower 1973). Almost a third have consistently believed that violence falls in this category, and the proportion objecting to violence has risen sharply (*Broadcasting* 1977). There also has been increasing concern over morality, with the percentage objecting to "bad language," sexual suggestiveness, portrayals of alcohol consumption, smoking, and narcotics use, and introduction to adult topics rising from 5 percent or less in 1960 to about 10 percent in 1970, and such concern almost certainly has risen in parallel with that over violence, since the two issues have frequently fused ("sex and violence") in regard to television. Anxiety over the competition from television in the socialization of children is reflected in the increase in the attempt by parents to prevent the viewing of certain programs as their children reach the late elementary school years (Bower 1973), when portrayals of general audience programing become relevant as models for behavior.

The increasing liberality of television in what it portrays suggests that such concern will not lessen and may become more widespread. The past few years have seen a remarkable series of steps against television violence (Comstock 1976; Comstock et al. 1978), including public criticism from the American Medical Association and the national Parent-Teacher Association, the attempt by some major advertisers to disassociate themselves from violent programing, and the short-lived "family viewing" policy under which broadcasters agreed to restrain violence and sexual innuendo during the early evening. Particularly noteworthy has been the monitoring of television violence in conjunction with advertising, so that the advertisers consistently associated with violence have become identified and subject to public pressure (National Broadcasting Company 1977; Slaby et al. 1976), which has exposed advertisers to the wrath of various groups and encouraged them to think more carefully about the programing which their commercials accompany. Many in the television business fear that advertisers may become increasingly skeptical of any program that is controversial, thereby diminishing the artistic freedom of the medium. Just as broadcast policies that strive for popularity may be questioned in regard to their total congruence with the public interest, so, too, may the desire of advertisers to court public favor, and what the foes of violence render may be more and different from what they sought.

Television advertising itself has also been the focus of attacks by groups concerned over the medium's influence on children (Comstock 1976; Comstock et al. 1978). The grounds have included the alleged encouragement of desires in children for products that may not be in their best interests and the ethicality of directing advertising at children who may be too young to distinguish a self-interested sales pitch from authoritative advice and counsel. Some of these criticisms spill over into entertainment because of its portrayal of various consumer activities, such as drinking. The issues, in addition to the legitimacy of the criticisms, include the times of the broadcast day when restrictions would apply. The industry's self-regulatory restrictions on what reaches children apply only when broadcasts are intended for children and they are a majority of the audience, which largely means Saturday mornings, but the greater part of children's viewing occurs at other times of the day.

The dissatisfaction of many with the commercial television reaching children has placed the issues of the quality of children's programing and the propriety and influence of advertising directed at children more prominently on the public agenda, with the result that, as the 1980s began, the FCC was weighing the possibility of new policies to encourage more and higher quality programing for children, and the FTC was reviewing the possibility of new restrictions on advertising directed at children. One result is an increase in research on the effects of advertising on children, a trend traceable to the research commissioned for the 1972 Surgeon General's inquiry (Comstock and Lindsey 1975; Ward 1972).

Where these various trends converge is in the heightened acceptance of the proposition that broadcasting content is a legitimate subject for public and governmental concern and action, although the majority of Americans are largely satisfied with television, and public opinion on the whole does not present a promising resource for the reordering of the way commercial broadcasting operates. In addition to the public's broad satisfaction with what they receive, the public holds many conflicting views, such as the self-canceling majorities that believe there are too many commercials and those that think commercials are a "fair price" to pay for entertainment (Bower 1973). Furthermore, communications issues are low among public anxieties. People infrequently cite television when asked about major problems, although large numbers and sometimes a majority will subscribe to specific criticisms when they are specifically asked to give or withhold their accord. Nevertheless, there is sufficient dissatisfaction to ensure that the television industry will not soon be able to retire from the adversarial relationship that has developed between it and some of its public.

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The Organization and Production of Prime Time Television

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This review is about commercial broadcasting in the United States, how dramatic programs are selected for broadcast, how they are created, and how they are distributed to viewers. The programs of interest here are the prime time telefilms, which account for a large proportion of the programs shown on commercial television.[1] Not only are these programs seen in the prime time hours (8:00 to 11:00 p.m.), but the successful shows are often repeated many times during the late night hours and during the daytime as well.

In spite of their popularity, or maybe because of it, most of what has been written about how these shows are produced and distributed has been found in the popular press (see Reeves 1979, as an example). Yet, almost from the inception of television, social scientists have suggested that, to understand the effects of television, it is necessary to understand how decisions are made in the industry, how and why the content is created, who determines the nature of the content, and what the role of the audience is in the selection process (Bogart 1973–74, 1956; Comstock 1972; Gans 1966; Lazarsfeld 1963).

The framework developed for this review will show that dramatic television shows are products of exchange, competition, and occasionally struggle (Cantor 1980). Most studies of content selection have shown how a single program is conceptualized and carried through the various levels of production and distribution (Gans 1957; Elliot 1972) or have focused on a single occupational group, such as producers (Cantor 1971; 1972), actors (Peters 1974; Cantor and Peters 1980), casting directors (Turow 1978), and musicians (Faulkner 1971). These studies are valuable because they provide examples of how the social context of production influences the final product and how social norms, organizational structures, and institutional pressures influence content selection and the creative process.

In this review both the organizations and the occupational groups which are major contributors to the creation of television dramatic programs are examined. Each succeeding section focuses on parts of the larger interactive context in which programs are produced and distributed, including government regulations and rulings, the role of the television networks, the production companies, and those creating the shows. In addition, the role or power of the audience in determining content is discussed.

The description and analysis of how prime time dramatic programs are created and selected for broadcasting are based on information from an extensive sampling of trade publications directed to those people who create and distribute television shows, primarily: (1) *Daily Variety* (Western Edition), *Hollywood Reporter*, and *Broadcasting;* (2) eighty semistructured, focused interviews with television producers and writers conducted in 1967–68 and 1970 in Hollywood (Cantor 1971; 1972); (3) thirty interviews with actors conducted in 1976 in collaboration with Peters in Hollywood; (4) six interviews with Screen Actors Guild officials in 1976; (5) a thorough review of available secondary sources, government documents such as Congressional Hearings and especially the Federal Communications Commission Network Inquiry Report (FCC 1980). Before describing and analyzing the selection process of dramatic programs, it is necessary to define the programs being discussed.

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[1] The amount of time devoted to dramatic programs on prime time varies from season to season. However, according to available sources, the episodic series, miniseries, and movies made for television have occupied the majority of prime time every season since 1967–68 (FCC 1980). Quiz shows, variety shows, and special programs have declined in importance. The number of hours varies from market to market as well as from season to season (Sterling and Haight 1978).

The Programs

The primary focus of this review is the production of the prime time episodic series, television movies, and the miniseries produced directly for television transmission which have been the most widely viewed programs in both the United States and abroad (Tunstall 1977). Some believe these programs are synonymous with American television. Other dramatic shows broadcast on television are not central to this discussion, specifically, the movies made for theater distribution and later shown on television, and the daytime serials (the soap opera). The emphasis here is on those programs made directly for network and syndicated distribution during the prime time hours. The theater film is financed and created differently from television drama. Although there are similarities (and differences) between the soap opera and the prime time programing, the soap opera deserves a separate discussion. The daytime programing has not been as extensively criticized, and, although it does make money for the networks, no soap opera is as profitable as a successful prime time program (Cantor 1979; FCC 1980).

The episodic series, including situation and domestic comedies, action-adventure dramas, and general drama were the most important programs on the air during the 1970s because of the large audience they attracted and the large profits they accrued for the networks, production companies, and local stations. Because of the proliferation of cable, pay television, and the videotape and videodisc players now available, the television movie is becoming very important and possibly will be the most significant new product coming from the Hollywood studios that have produced network programs for the last 30 years. However, because movies do not continue from year to year, they are more difficult to study as culture, in comparison to the series. Movies are usually seen on television just a few times; unless a movie is a pilot film for a series, its cultural impact, however important, may be difficult to assess.

The Series

Episodic series are dramatic programs, usually from ½ hour to 1 hour long and appear on a weekly basis. The key feature distinguishing a series from other serial drama is that each segment is a self-contained story revolving around the main characters.

The series itself has a basic concept that helps determine the content of each episode, but this concept is relatively simple so that various complete stories can be told each week. Because each episode is a complete chapter, episodes can later be rebroadcast in any order. Thus, the series is an ideal form for commercial over-the-air broadcasting. The chapter format allows viewers to miss episodes without discontinuity. The possibilities for syndication and rebroadcast are also enormous, if the series is successful. For example, during the 1979–80 season and again in the 1980–81 season, *M*A*S*H* was on the air in prime time with new episodes, and at the same time old programs were rebroadcast through syndication. In most market areas, it is possible to watch different *M*A*S*H* episodes both nightly and weekly. *I Love Lucy, Star Trek,* and other old series are repeatedly seen through syndication on independent stations during prime time or on network stations in late night or daytime slots. (See appendix for more information about series.)

Content of television drama varies somewhat by the medium (tape or film) and by the type of program. In this review, the term "film" is used to include productions made on videotape as well as on film. Although there are some differences between the two forms, the same production companies often make both, and both are broadcast over the air. Situation comedies are more likely to be videotaped and action shows more likely to be filmed. Also the large studios often use film, while the independent producers are more likely to use videotape.

The situation comedies and the action-adventure series also differ in other respects. Situation comedies are more likely to have women as stars and supporting characters than are the action-adventure series, and the situation comedies also are less violent, but they contain more sexual content than the action series. Women are likely to be segregated in the situation comedies or programs that resemble the daytime series. Action drama, whether series or movies, have few women in the cast.

The content of television has changed in the last decade. Programs which show unmarried couples living together, divorced women raising children without husbands, and single women with serious careers represent changes in topics that were considered taboo a generation ago. The success of *Roots* and other programs demonstrates that political topics once forbidden on television are now allowable. Another change is the demise of the action-adventure series and the increase in the popularity of the situation comedies. In 1956, only two of the top 10 shows were situation comedies; in 1978–79 situation comedies were 8 of the top 10. Several of these changes can be directly attributed to pressure group action, others to the way the producers, directors, and network officials now define the audience. Violence is still prevalent, not in the series but in the miniseries and in the movies. (See the Report of the United States Commission for Civil Rights 1977 and 1979 for a fuller discussion of how content has changed in the last decade.)

There have been changes in form as well as content. The episodic series, although still important, are less important than they were 10 years ago. The movie made for television, which was a new form in the late 1960s (Cantor 1971), has become increasingly popular. Mini-series, such as *Roots*, and programs resembling the day-time serial also have become popular.

The System

Regardless of who holds ultimate control over the means of communication, one element in the structure of the communication process remains the same: Whether ownership of the means of mass communications rests directly with the government, as in many socialist and third world countries, or with individuals and corporations that privately own the various media as in western democracies, mass communications are organized activities. The work of creating content is never completed by one artist, but rather by groups, most of them having a bureaucratic form of organization. In most bureaucracies, ultimate decisionmaking power over what is broadcast or printed rests with just a few people, and the creative people working in these contexts become employees subject to the power of those few individuals having the power to hire and fire.

The American broadcasting industry is complicated by the fact that several different organized bureaucracies are involved in creating and broadcasting the programs on the air. The content of television is not produced by those who broadcast the programs. The production companies responsible for creating the series and movies are located in Hollywood. These program suppliers are, in name, independent of the broadcast industry. In fact, many of the same production companies which make prime time drama can and do make films and videotapes for other outlets (schools, public television, theaters). When a program is being made for television, it is likely that one of the three commercial television networks—American Broadcasting Company (ABC), Columbia Broadcasting System (CBS), and National Broadcasting Company (NBC)—will be primarily responsible for financing the program, as well as being the original distributor. There are several other buyers for television drama in addition to the networks, but presently these buyers are less consequential, accounting for a minor portion of production. Those people who create television shows must satisfy the production companies and the networks before a show can reach an audience. In turn, the production company sells programs to the network. The task of the network is to convince local stations and advertisers that the programs have potentially large audience appeal and will thus be profitable.

Nowhere is the relationship between the creation of art (or culture) and the market economy more apparent than in the present operation of the broadcast industry. Program suppliers (production companies) hire writers, directors, actors, and other creators to make films and videotapes. The program suppliers are dependent on others to purchase and distribute this film after it is made. The programs discussed here are transmitted by one of the networks, with commercial advertisements, through local broadcast stations which are either network owned and operated or network affiliated through contractual agreement. Rating services are employed to judge whether programs and commercials are reaching the target audience; through polling and sampling homes with electronic devices and diary-type records, the rating services discover the approximate size and composition of the audience. If a program does not reach the "right" audience, it is dropped from the schedule. The majority of shows are canceled after only a few episodes (usually 11, one-half season). Those shows renewed for a second season have a good chance of being syndicated (repeated) for additional showings.

Government and Television Dramatic Programs

An additional element complicating this process is the role played by the government. The current state of broadcasting in the United States results from government regulation and lack of regulation (Comstock 1980). The broadcaster is legally required to program for the public interest. Congress established the Federal Communications Commission (FCC) in 1934 to see that this mandate is carried out. This agency, in combination with the courts, has determined the structure of American broadcasting by setting the rules to which broadcasters must conform. The networks, however, are not considered broadcasters: A network is simply a group of television stations broadcasting the same programs. Together, the three commercial networks program over 90 percent of all prime time hours for their affiliated and owned stations.

Until the mid-1960s, the regulatory process was dominated by three major participants: Congress, the FCC, and the industry itself. The National Association of Broadcasters (NAB), which comprises the three networks and approximately 4,000 member radio and television stations, is the major lobbyist for the industry. Krasnow and Longley (1973) argue that in the early years of broadcasting the NAB was successful in thwarting efforts to place regulations on broadcasters that did not meet with industry approval. In recent years, however, the NAB has encountered increasing difficulty in its efforts to fend off congressional and FCC regulation. The NAB is essentially controlled by the three networks, because 90 percent of all local stations are network affiliated or owned and operated by the networks. Both the networks and the local stations adhere to the NAB Code, which works essentially as a mechanism of self-regulation.

Because of the power of the networks over the affiliates, there has been concern over centralized control of television content. Since 1963, there have been several attempts to achieve a more equitable balance of power between the networks and the local stations. The most important constraint on the networks has been the Prime-time Access Rule adopted in 1970. This regulation took local stations off the network during the prime time half-hour, 7:30 to 8:00 p.m. The Prime-time Access Rule was established in answer to critics' claims that local station autonomy had been superseded by the networks. By designating ½ hour of prime time to the local stations, the FCC was attempting to encourage local public service broadcasting in place of network-contracted dramatic shows, usually an episodic series. What actually happened was quite different from what the FCC and the critics desired. In most parts of the country, the 7:30–8:00 p.m. time period has been filled with game shows or syndicated film programs similar to the dramatic shows they replaced. Although more locally produced programs have been aired in this period in some parts of the country, more commonly the shows on the air have been produced elsewhere and purchased from syndication companies. This outcome is explained by noting how costly it is for local stations to produce half-hour programs five times each week (Head 1976; FCC 1980).

In addition to the FCC, the Department of Justice has been concerned about the monopolistic practices in network programing. In 1972, the Department brought an antitrust suit against the three networks, claiming that each network individually constrained trade because program suppliers had no other market for their product. This case has only partially been settled, but the result has been to keep the networks from directly producing much dramatic television. Although all three networks produce some programs, only rarely are they both the distributor and producer of dramatic shows.

The relationship between the government, the networks, and production houses is complex. There are serious questions concerning the application of the First Amendment and questions relating to the role of citizen groups who have used the regulatory procedures and the courts to express displeasure with the content of dramatic programs. Also, government agencies often act as pressure groups in matters relating to the content (see Cantor 1980; Report of the U.S. Commission on Civil Rights 1977, 1979).

In addition, the FCC recently completed a preliminary analysis of network-affiliate relations, the first since 1959, which includes a review of the legal and economic controls exercised by the networks over the producers of dramatic films (FCC 1980). The preliminary report shows that both the networks and production facilities operate relatively free of regulation in comparison to the local stations, but, since 1970, more regulations have been adopted (Mosco 1979; FCC 1980). However, prime time drama is still freer from regulation and outside censorship than news and public affairs programs (Friendly 1975). Even with more controls on the networks than existed in the recent past, the role of the networks in supplying programs to local stations remains very strong.

The relationship of the government to programing is not static; it has changed and, no doubt, will change in the future. For example, there was an attempt in the late 1970s to deregulate broadcasting. This attempt failed, but proponents of deregulation probably will persist in the future (Cantor 1980).

Production, the Networks, and Syndication

Although prime time drama is broadcast on television, its production represents a marriage between the Hollywood movie and radio drama. The episodic series were originally simply radio with pictures. The format for television drama is partially determined by the 15-minute station break, partially by the themes and stories which were popular with radio and movie audiences, and partially by the nature of the movie industry as well as by the pre-television network radio (Barnouw 1977).

The final decisions about what shows will be broadcast are made by a few people in the network who are far removed from the production process. Because of the nature of broadcasting in the United States and the dependency of the networks on advertising support, the networks must provide local stations with programs which will draw large audiences. Brown (1971) has said that the real function of American television is not to entertain or inform (although it may do both) but rather to provide an audience for the advertiser. Thus, certain producers having a good record of past success are very much in control of the work process and, in a symbiotic relationship with the networks, produce most of the television shows seen today.

Until 1977, just the three networks were primary buyers for television drama. In the last few years, at least one program supplier has had an additional buyer for its product: In 1977, a group of stations joined Tel-Rep, a national advertising sales company, to form Operation

Prime-Time for producing alternatives to network dramatic programing. The first production, Taylor Caldwell's novel, *Testimony of Two Men*, was translated into a successful miniseries. The stations that carried this program were able to bring in enough revenue to pay for the program and still make a larger profit than they would have achieved if using a network program. This cooperative, which has been called a fourth network, started with approximately 65 stations. It had grown to over 100 stations by 1979. Both network-affiliated and nonaffiliated stations belong to the cooperative. Of the more than 600 affiliated television stations in the United States, the exodus of less than 100 to Operation Prime-Time may seem insignificant, particularly as the affiliated stations still broadcast network programing most of the time. However, alternative programing sources for the local stations did not exist 10 years ago. Only a few producers have been able to bypass the networks and sell programs for direct syndication. Norman Lear's *Mary Hartman, Mary Hartman* is usually cited as an example of a successful attempt of an independent producer to have a dramatic program syndicated. *Mary Hartman, Mary Hartman* was also an attempt to have the daytime formula of a continuing story, rather than complete episodes broadcast during the evening. The program was on the air for 18 months, 5 days a week.

Operation Prime-Time opened up the possibility for going outside the networks for support for not just one producer but several. Until 1980, only one production company (MCA/Universal) supplied programs to Operation Prime-Time (six miniseries were supplied). In 1980, Paramount, Columbia, 20th Century-Fox, Time-Life, and Hanna-Barbera contracted to make films for the cooperative (FCC 1980).

The government antitrust action, the development of Operation Prime-Time, and the advent of buyers for movies to be shown directly on cable or pay television outlets have provided some competition to the networks. The networks, however, are still the primary buyers of television films. The networks actually lease (license) the films, including series episodes, from the program suppliers for two showings. The right to sell to other markets (such as nonaffiliated and network stations) for additional showings of the same show, foreign syndication, videodisc and videotape, and pay television must by law remain with the producer or syndication company rather than the network. However, a network success insures large profits from these other markets. Producers (program suppliers) therefore prefer network sales for their first showing, even though the producers assert that network support does not generate a profit unless a program is also syndicated. Not only does a network sale help to capture a large audience (owing to the networks' control over the schedules of local affiliates), but a network sale also makes the possibility of future syndication more likely.

Producing Programs for Television

The production companies making programs for television can be divided into three types: major film studios, major independent producers, and minor independent producers. Two other groups of potential suppliers, advertisers and the networks themselves, also produce series, but their role is quite minor.

Film Studios

The film studios include Universal, 20th Century-Fox, Paramount, Columbia, MGM, Warner Bros., and Walt Disney. Each of these is large and to varying degrees diversified. Paramount Pictures, for example, was purchased by Gulf and Western Industries, Inc. In 1978, Gulf and Western reported sales of $4.3 billion and earnings of $180.5 million (FCC 1980). These studios not only make television dramatic shows but also theater movies and other cultural products.

In addition to the physical facilities and financial resources, the large studios also maintain a number of producers, directors, writers, and other creative people as well as production personnel. Writers often work under contract to a studio for a time as an on-line producer or story editor and then return to freelance work or independent producing. The studios also lease their facilities to independent producers. With so many studios now producing both theater movies and teleplays, the demarcation between the television industry and film industry which was fading in the 1950s has now become completely blurred.

Major Independents

Those known as major independents include such well-known companies as Tandem Productions, MTM Enterprises, Lorimar, and Aaron Spelling Productions. The characteristic common to each of these production companies is that their success was built on one or more creative individuals who were primarily responsible for the company's initial success. In the case of Tandem, and the related companies TOY and TAT, for example, these individuals are Norman Lear and Bud Yorkin, who developed *All In The Family*. In the case of MTM, Grant Tinker and a small group of writers and producers who developed *The Mary Tyler Moore Show* are the creative force responsible for the success of the studio. Because of the importance of both *All In The Family* and

The Mary Tyler Moore Show, they will be discussed in detail later.

These independent producers differ from the film studios in a number of important ways. First, each was created primarily for the purpose of producing television entertainment programs. Second, none of the independents has its own production facilities. Finally, according to the FCC report (1980), the key to the success of these independents also may suggest the limits to their growth and the source of their eventual demise. The development of the firm into a major independent reflects the ability of the creative nucleus to sustain that success with more than one series. Aaron Spelling has been the most successful of the independents. As shown in table 1, few of the current major independent production companies were even in existence 10 years ago. Spelling has been an independent producer with several different production entities continuously since the mid-1960s.

Minor Production Companies

Those people who have presented ideas for series to a network or even considered doing so usually call themselves producers. There is a large group of people in Hollywood and New York who desire to produce movies and series for television. A few individuals have been successful in developing one idea into a series commitment and have never been able to duplicate the achievement. The difference between major and minor independent production companies is, for the most part, the ability of the major independents to sustain their initial success, for at least a short period (FCC 1980).

Usually, a person with some experience in television as a writer, director, or on-line producer is approached by a network to develop a series. According to the network inquiry report (FCC 1980), almost all prime time network entertainment series and made-for-television movies are supplied by these three sources. From 1968 to 1978, the only exceptions were a few network-produced or co-produced ventures. In 1979, Procter and Gamble, having produced daytime serials for over 30 years, began co-production of a prime time series with Universal/MCA.[2] Table 1 illustrates the share of network prime

Table 1

Twenty Leading Network Prime Time Program Suppliers

1969–70 Season		1977–78 Season	
Supplier	Percentage of Programing Hours	Supplier	Percentage of Programing Hours
1. Universal	12.8	Universal	18.4
2. Twentieth-Century	7.3	Warner	6.7
3. Paramount	6.4	Spelling-Goldberg	6.1
4. Columbia	6.1	Lorimar	5.4
5. MGM	4.5	MTM	5.3
6. Filmways	3.6	Columbia	3.6
7. ITC	3.0	MGM	3.5
8. Harbour	2.6	Paramount	3.5
9. Spelling-Thomas	2.3	Aaron Spelling	3.2
10. Talent Associates	2.2	Twentieth-Century	3.2
11. Teleklew	2.0	Walt Disney	2.9
12. CBS	1.9	Tandem	2.9
13. Walt Disney	1.9	Quinn Martin	2.7
14. Leonard Freeman	1.8	TAT	2.4
15. NBC	1.8	TOY	2.2
16. Sullivan	1.8	CBS	2.0
17. Peekskill	1.7	Four D	2.0
18. Xanadu	1.7	Whacko	1.7
19. Van Bernard	1.5	Schick-Sunn	1.6
20. Glenco	1.5*	David Gerber	1.6

* Barnaby Productions also had a share of 1.5%.

Source: Federal Communications Commission Network Inquiry (FCC 1980):21

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[2] Procter and Gamble along with other advertisers produced many prime time series until the early 1960s. Following the quiz scandals in 1959, the advertisers lost direct control of dramatic programing (Barnouw 1978; Cantor 1980). Even if an advertiser supports a pilot film or story treatment, this support does not guarantee the program will be purchased by one of the networks.

time of the 20 leading suppliers in the 1969–70 season in comparison with the 1977–78 season.

Although there were 20 program suppliers making these programs during the 1979–80 season, most work was concentrated in just 9. These companies can be divided into two groups: the independent producers, including Aaron Spelling Productions, MTM Enterprises, Tandem/TAT (formerly Norman Lear, who has left television production for other pursuits), and Lorimar Productions; and the large studios, Universal/MCA, Columbia Pictures, Warner, MGM, and Paramount. The large studios operate similarily: An executive producer is in charge of several programs, and on-line producers have responsibility for the day-to-day operations of each show. As well as producing films, each studio has people generating ideas for new programs. The important independent producers such as Lee Rich of Lorimar Productions, Inc., and Aaron Spelling of Aaron Spelling Productions often act as their own executive producers as a means of maintaining control.

Independent producers will arrange with a studio such as Universal/MCA, Paramount, MGM, or Columbia to distribute and provide the facilities to produce the shows sold to the networks. For example, Johnny Carson has a $50 million commitment from NBC for a minimum of three series over a 3-year period, as well as an unspecified number of television movies. Columbia Pictures will provide the studio space to make these shows and will have exclusive rights to distribute these programs after NBC has shown them twice.

Although Carson is not noted as a creator of dramatic television, he has been able to break into the production side of television because of his value as a talkshow host for NBC. Carson is not the only producer who has made a "deal" with a network for either a certain amount of time during a season or for one or more hours of prime time during a week. Those independent producers who have had successes, such as Grant Tinker, Quinn Martin, Lee Rich, Garry Marshall, and of course Aaron Spelling, who controlled 25 percent of the prime time hours on ABC during the 1979–80 season, have arrangements with the various networks. However, these contractual arrangements do not mean that the producer's ideas will necessarily prevail. Producers must present a number of ideas and concepts to the network before production can be initiated. Sometimes the idea comes from the producer, sometimes from the network itself, and sometimes from a "committee" composed of people involved in production such as writers, producers, and directors who are under contract to the production company (Miller and Rhodes 1964).

Until the late 1960s and early 1970s, it was still possible for a writer with an idea for a series to gain entry to network executives for support. As the studios have become more powerful, this route to production is unlikely. Now the networks approach an on-line producer, star actor, or sometimes even their own former executives with a production deal, or the entrenched and powerful production companies act as the gatekeeper for those trying to have their ideas translated into dramatic production. The networks will accept no series ideas or scripts from writers or minor independent producers who do not have a registered agent. Almost no one or no organization, including the large studios, makes films without some financial backing from outsiders, for television usually one of the networks.

The production companies have two major functions. The first is creating programs for television; the second is keeping programs on after they have been scheduled. As Hollywood changes and movies and miniseries become even more popular (ABC, for example, contracted for 25 movies for 1980–81, a record number), the power of the production companies will be concentrated further. Presently, the important independent producers and the large production companies with access to the networks and other distributors are the most powerful because it is they who can get the shows on the air. After a series has become successful, the star actors become the most powerful people in television.

In former years most of the episodic series were presented to the networks for purchase in the form of a pilot film. The pilot film is still used as a primary source for series selection. However, because the investment in a pilot film is so great, many are also shown as films to give them wider distribution. Often a pilot film also will be seen as a movie made for television. As such, it will be shown on the air several times during a season and, if successful, repeated for several seasons. In addition, it will be sold to a syndication company for showings abroad, either in theaters or on television (or both). Thus, the investment in the pilot is profitable to both the program supplier and the network. In addition to their initial wages, actors, writers, and directors receive residual payments from repeated broadcasts.

Not all pilot films are purchased as series. The networks are involved in every step of the creative and production aspects, from the initial story concept to a successful series. Before a script can be written, the story idea is presented to an appropriate network executive, usually a person in charge of programing. This is done verbally because, under the rules of the Writers' Guild, nothing should be presented in writing without a formal contract. Even after a script is written and purchased by the networks, there is no guarantee that it will be financed and made into a film. When a script is completed, it is the property of the network. However, contracts are written so that the program supplier is free to sell the script elsewhere, should the original contracting network reject it. If not satisfied with the script, the network has the option of asking for rewrites, either by the original author or by a different writer. If and when the network is satisfied, a firm contract is negotiated with a program supplier.

Most films do not become series. The network and the advertisers decide whether to place an order with the program supplier for a specific number of additional scripts to be made into films. After the show is on the air for 3 or 4 weeks and there is some indication of audience approval through acceptable ratings, a decision is made on whether to continue the series through the season. If the audience disapproves or the demographics of the audience are considered inappropriate by the networks and advertisers, the show is cancelled, dropped from the schedule. A series which remains on the air for 11 weeks or less usually is never seen again. Those shows that maintain good ratings can stay on the air for season after season.

Some programs, such as *All In The Family* and *The Mary Tyler Moore Show*, were on the air for more than 7 years. For example, *All In The Family* premiered on January 12, 1971, and remained in production under that title until the fall of 1979. During the 1979 season, the main character, Archie Bunker, left his job as a dock foreman for a tool and die company and purchased a neighborhood bar. The show is still on the air at this writing (1980–81) but under a new title, *Archie Bunker's Place*. Of all the shows of the 1970s, *All In The Family* was considered by some to be the most advanced in complexity and sophistication of humor and has generated a body of scholarly literature and criticism, probably unequaled in television history. Terrace (1976) suggests that American television comedy was led out of infancy and into maturity with this series. *The Mary Tyler Moore Show*, also a comedy series, premiered in the fall of 1970. It, too, was considered avant garde because the main character, Mary Richards, was portrayed as a happy, single woman, pursuing a career. These shows are also syndicated and shown in repeated broadcasts through both network and independent stations in the United States and abroad, generating profits for the producers and residual payments for the actors, writers, and others.

Working in Hollywood

Because the production and manufacture of American television drama are rooted in the business interests, programs must be produced by people who are either willing to suppress dissident values (should they have such values) or by people who are fundamentally in agreement with the existing social and economic system. Although there may be a boom in production as more movies for television are needed to supply the new cable outlets, there are still far more available and able workers in Hollywood and elsewhere than can be employed by the existing structure of the industry. Without work there is no opportunity to express anything new on television, and television as a means of communication is closed to most. Even if a worker is employed in a creative task, for example as a writer, on-line producer, director, or actor, most of the important decisions about what to produce are made by others, either the program supplier or the networks. However, after a show is on the air, especially if it is successful, the power of the creators increases substantially. Freelance writers remain powerless, but on-line producers and especially star actors are often the key to the continuing success of the series.

On-Line Producers[3]

The working producer of television drama has a significant role and relative power in the selection of content after a program has been purchased by the network or syndication company. Producers are in charge of hiring the cast (except possibly the stars), the directors, and the writers when these people are contracted on a freelance basis. The producer has the final responsibility for cutting and editing the film. In television, producers complete many of the tasks assigned to the film director in the motion picture industry (especially in European productions). In television, story development is another major function of the producer. Most on-line producers are actually writer-producers or director-producers. It is often said that feature film is a director's medium and television a producer's. Three of the major creative elements of television production—story, casting, and editing—are under the producer's control. The producers usually hire the writers for one or more scripts and often work with the writers as well, directing the tone and outcome of the scripts. Many freelance writers aspire to become on-line producers because of the relative power and autonomy vested in the role. Ideally, the producer has responsibility for all the creative aspects of the show, but this is always delegated authority. Even if the producer owns, creates, and produces the show, the network retains the right of final approval of scripts, casts, and other creative matters. In addtion to the network officials, others in the production company also have control over the on-line producers' work. The studios are organized bureaucratically, with an executive producer in charge of several shows, each with its own on-line producer. Thus, although the producer is the most powerful person on the production team, with the possible exception of the star actors, this power is never absolute. Should a producer fight too often with the network or production company over creative decisions, the producer will be replaced (Cantor 1971).

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[3] See Cantor (1971) for a description of the *men* producing shows in 1967–68 and 1970. There are no other systematic data on the characteristics of producers and writers available. A review of the programs in production on November 6, 1980, shows that almost all on-line producers are male (*The Hollywood Reporter* 1980). For an indepth discussion of the producers and writers in 1977, see Stein (1978). Stein's material has not been collected systematically.

Actors

The importance of actors to dramatic production has virtually been ignored by those who are concerned with the impact of television and movies on American manners, morals, and behavior. The appeal of star actors may be more important to the success of a film than the subject matter (Cantor and Peters 1980). Moreover, actors are so important in the film industry that they have the power to stop production for months, as they did during the summer and fall of 1980 when the Screen Actors Guild and the Los Angeles local of the American Federation of Television and Radio Artists went on strike.

Actors are important in other ways as well. For example, television series are often named after the star. Star actors are often the most powerful people on the sets, determining subject matter as well as interpretation of the scripts. Yet this power is ephemeral and transitory. The star actor, especially the very few highly paid movie actors, rarely appears on television, except in movies originally made for the theater showings. There is little question that such star actors could be in television series and made-for-television movies. Possibly they could choose the kind of program in which to appear. However, actors as a group do not have the power to control content, and even individual stars try to form their own production companies to maintain control over the creation of a movie. Even stars such as Robert Redford or Burt Reynolds cannot form production companies without some financial support. Individuals can contribute some backing money, and to insure that part of the profits are returned to them many actors do invest in their own films. Nonetheless, everyone in the business of television and film making is at the mercy of those who ultimately control the purse strings. In the case of television, this financial control lies with the networks or, occasionally, with a cable supplier such as Home Box Office (part of the Time-Life media conglomerate), Operation Prime-Time, or some other syndication supplier. This control of the purse strings does translate into creative control at times. If no one will finance an idea, it will not be used. While star actors and producers with a proven track record are more likely to find financing than are unknown creators, even established people are not guaranteed backing.

After a series gets on the air and is successful, the star actors in the series become by far the most powerful of the creative people in television. Actors starring in successful series are the people to whom everyone else, including writers, directors, and producers, must cater because the series depends on the actor remaining on the air. The actor's wishes, therefore, are considered in all aspects of the production, including episode selection. Alan Alda of *M*A*S*H* is one of most powerful people in dramatic production. He is able to direct shows if he wishes (often a secret desire of many actors); the scripts he writes are accepted and produced; and there is no doubt that, if other writers and directors do not please him, they are not retained on the show. Whether the power Alda holds is transferable to another continuing show remains to be seen. Most actors are not able to transfer their success from one show to another. The popularity of the star in one series does not guarantee his or her success in subsequent ones. Mary Tyler Moore, for example, was very popular in her situation comedy, *The Mary Tyler Moore Show*. The program went off the air not because of low ratings but because she was no longer willing to continue in the role. Although she was the star in her own variety program aired the following season, the new show was a dismal failure (judging by the ratings).

Supporting actors, even those who are regulars on a series, are often the least powerful of all the creative personnel, and, if an actor becomes troublesome, his or her part can easily be written out of the series. When supporting players become as popular as the star, a new series is often developed for them. This process, known as the spinoff, has been very common over the last 10 years. For example, *The Mary Tyler Moore Show* generated a number of spinoffs, including *Rhoda*, *Phyllis*, and *Lou Grant*.

Because of the large profits generated by a successful series, the star actors retain power as long as the ratings remain high. Most actors are powerless, however, and unless they are stars, they are unable to have control over their work. They must depend upon others to write the parts, produce the shows, and finance and distribute the final production. Even when an actor has been selected for a particular role, it is likely that someone else will even determine how the role shall be interpreted. More than any other occupation publicized as being glamorous and creative, acting in the United States, especially television acting, provides little freedom or creative autonomy for those appearing on the screen.

Writers

Writers closely approximate the stereotype of the isolated artist, in comparison with other creative people in Hollywood. Writers are well educated. Almost all have graduated from college, and they often come from elite schools. Most writers claim they would prefer to write drama or other fiction considered more highbrow or more socially significant than the material they write for television. Gans (1974) had similar findings when he interviewed television writers. Writers see themselves as "artists" or educators. Many try to get didactic messages into their television shows. But writers for television have little or no control over any aspect of their craft, except the invention of dialog and situation. Their work is routinely subjected to rewriting by producers or other writers. Scripts may be changed before or during production by a story editor, producer, network censor, director, or the star actors. Freelance writers sell scripts outright to the production companies or producers and thus lose all control over changes.

Because of the control over scripts by on-line producers, writers often become producers themselves. Most of the independent producers began their careers as writers. Although there are conflicts between the freelance writers over credits and occasionally over content, writers, on-line producers, and story editors usually belong to the same guild, Writers Guild of America, West. It is not unusual for a person to be a freelance writer one season, a salaried on-line producer or story editor the next. Like acting, writing in Hollywood is an occupation where there is little stability or security. Star writers are very much in demand, but the occupation, except for a few established people, is precarious.

The Audience

The relationship of the audience to the content of television has generated controversy. People within the industry claim that television content reflects the tastes and desires of the audience. Elsewhere (Cantor 1980) this formulation has been called the "Demand Model." Adherents of this perspective believe that the market determines content. Most broadcasters, some producers, and others (such as market researchers) consider the audience very influential in determining content—in fact, the most powerful influence on content. In contrast, social scientists and other scholars are less convinced about the audience's power over television content. Some believe the audience is helpless and that all content is imposed by those who control the means of production and dissemination. Others, mainly sociologists and social psychologists, take a middle position. These analysts see the audience as having an indirect but active input into the creation of content. The material available on the audience is vast. However, most studies of the audience address questions relating to the effects of content on the viewer, the uses and gratification the content has for the viewers, or descriptions of the audience (see Comstock et al. 1978). Few investigators have considered the question raised in this discussion: How influential is the audience on the production of popular culture?

Because of the way content is produced, simultaneous feedback from the audience to the creators is impossible. In television drama, even that filmed or taped before a live audience, there are few second chances for changes in scripts or ideas. A pilot film storyline can be changed before it becomes an episodic series. Because films and tapes are produced months before they are shown on the air, the only power the audience has is to turn off the television sets.

Given that broadcasters and advertisers understand the reality that direct feedback is almost impossible, the question might be asked: Why do some believe the audience is the main force responsible for shaping the content of drama? The answer is simple. Because television is a marketing medium, it must present programs appealing to a large number of viewers. The networks, rating services, and local broadcasters believe ratings are indices of audiences' wishes, not simply reports of audience preferences among a limited choice of offerings. This view of the audience is not necessarily one in which the audience actively seeks entertainment with certain content. Rather, the audience is simply a market for products. In television language, cities become "markets," and the viewers become no more than their own demographic characteristics. Ratings are comparable to votes.

This formulation of the audience as the most powerful influence on dramatic content is relatively simplistic. Although most investigators agree that the process described approximates reality, most also agree that simply saying that the audience gets what it wants leaves many questions unanswered. How does content change? How do creators know what will be popular with the audience as there is so little direct feedback and most shows are made months before they are viewed? Why have some programs which have had a relatively small audience when first broadcast been able to build audience interest? Under the demand formulation, the content comes from the creators who, through knowledge gained either from some mystical intuition, from rational processes (such as marketing research), or from ratings of previous shows, are simply conduits for their audiences.

Most serious analysts of culture-producing industries are aware that the number of available goods (ideas for dramatic productions) far exceeds what can be successfully produced and marketed (Hirsch 1972; FCC 1980). Before their production and dissemination, dramas, like most popular cultural forms, are processed by the selection system described above. The actual filtering takes place within the production companies and through the networks and other distribution companies. None of the organizations involved is able to decide with any certainty whether a drama will succeed with the "voting" public, that is, those families who are among the 1,150 who make up the Nielsen sample. However, a reality of this screening and selection is that producers, network officials, and others make decisions with the ratings in mind. The perceived likes and dislikes of some audiences operate as one basis of selection. This notion of the audience existing only in the imaginations of the creators and disseminators is a key issue.

In the examination of factual material concerning selection and creation of drama, it is obvious that although the ratings are very important, other factors must be considered. The creators and selectors of drama often do not know what the audience will like. Sometimes, they take chances on new ideas and these result in very successful programs. In contrast, the number of programs which fail each season (see *Newsweek* 1979) shows that those most responsible for television are indeed poor predictors of what will succeed. The ratings determine which series *will stay* on the air; ratings, however, have little to do with what *gets on* the air except in the most indirect way. Moreover, there is no way to know whether shows which were passed over might have been very popular.

Nonetheless, the demand model has provided a successful rationale for the system as it exists. Those who fail to capture the right audience do not remain in their respective positions, and those whose programs receive high ratings are very successful. Both those who select properly for the networks and those writers, producers, and actors who reach the right target audience remain in production and are desired as employees and creators.

Some explain content as presenting the demands of the audience; others apply a more sociological feedback hypothesis. The two approaches are qualitatively different (Cantor 1980; Gans 1957; Bauer 1958). Writers and producers are creating for an audience, but that audience is not necessarily the ultimate audience. Rather, the shows are created for an audience composed of network officials, producers, and other gatekeepers and even occasionally for the writers and producers themselves. Thus those who write stories and produce films primarily consider what the buyers and distributors want. This means, of course, that they are much influenced by ratings (what has been successful previously and the demographics of the target audience). Because the network officials and others conceptualize their audiences primarily by age, sex, and income, so do the writers and producers. If the target audience were defined as people with certain political or religious beliefs, the content of drama might be quite different. Under this formulation, changes in content occur when advertisers and other financial supporters want to reach different target audiences or when the medium no longer depends on the advertisers' support. Thus, it can be predicted that content will change as pay television becomes more widespread or if videotape and videodisc become more widely adopted. Creators and communicators construct in their imaginations an audience which reflects organizational necessities. To work in television, writers and producers, unless very successful or well known, must conform to the norms and policies of the industry. Those writers, producers, and other creators acknowledge the conflicts that arise because the audience they must ultimately please may be different from the audience for whom they would like to create.

Throughout, the term "audience" has not been defined. The ultimate audience is composed of those people who watch television drama. However, there are other audiences as well. Already mentioned are network officials, producers, and advertisers. In addition, there are critics and pressure groups. During the 1970s, pressure groups actively advocated change in television content. Their impact on the dramatic programs may be more substantial than people realize. For example, the American Medical Association, the National Parent Teachers Association, the National Organization for Women, and Action for Children's Television have been trying to gain access to television. These groups pressure both the creative people working in Hollywood and network officials.[4] Most pressure groups, when questioned, contend that the changes in portrayal they desire have not occurred. Possibly the greatest change resulting from pressure group activity has been to keep the action-adventure series off the air. Although those doing content analysis can show that dramatic television has been and remains violent and that women and minorities continue to be stereotyped, the content *has* changed (Gerbner et al. 1979). However, these changes are not in the directions desired by the critics.

Conclusion

Television drama is not simply a reflection of the tastes and values of the creators (actors, directors, producers,

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One result of the pressure group activities was the establishment of the Family Viewing Hours, the hours between 7:00 and 9:00 p.m. This designation is not an overt requirement of the FCC; Family Viewing Time evolved through an agreement between the FCC and the networks because of the continuous and ever-increasing criticism from citizen groups, social scientists, and educators about the content of dramatic shows. The plan developed during the winter of 1974, when network executives, FCC staff, and their respective lawyers met. In November 1976, the Federal district court in Los Angeles declared the Family Viewing Hour unconstitutional because the restrictions on programing content were not true self-regulation by the industry but partially imposed through threats by the government. As of this writing, the Family Viewing Hour is still in effect because the court ruling is being appealed by the networks. See Cantor (1980) for a fuller explanation.

and writers). Nor is it simply reflection of the powerful executive producers who are the gatekeepers between the networks and those below them. At the present time and throughout the 1970s, the television networks have held the greatest power in determining the nature and content of television. Supported by the legal system, the networks have the power to decide what programs will be presented to the audience, the time these programs will be broadcast, and whether the program will be continued. The television networks do not exist in a social vacuum, however; they are dependent on program suppliers to provide the shows, on local stations to broadcast programs, on advertisers to sponsor their offerings, and on rating services to evaluate their decisions. For local stations and advertisers to support the programs selected by the networks, a sufficiently large audience (determined by the ratings) must tune in. Also, networks, program suppliers, advertisers, and local stations may be intimidated by overt pressure from diverse citizen groups. Before a program is selected by the networks, two questions are usually asked: How will certain groups react if the programs are aired? Will the target audience like the show?

Television drama will change only when the audience is defined differently by those who create the drama and those who disseminate it to the viewers. Almost everything written about television in recent years suggests that we are on the verge of a communications revolution involving the adoption of new technologies for the transmission of information and entertainment. Many of these technologies, such as cable television and videotape recorders, have been available for many years, but owing to legal encumbrances and business reluctance to invest in their manufacture, the technologies have not been available nationwide. There is evidence that, during the 1980s, both cable and recording equipment will become more widely available. Some claim this availability will provide a greater choice of drama for the audience, more work for creative people, and new forms of dramatic production.

No doubt there will be more choices for home viewing as cable becomes available in more cities. At least one channel in every cable system will be devoted exclusively to pay television. These channels will provide movies previously shown only in movie theaters and possibly also some new productions and videotapes of live theater. These options, presently available to several million viewers nationally, will become a primary means of dispersing films along with the network offerings to the audience.

The target audience for network drama is the lower middle class, between the ages of 18 and 49, married and with children. This group represents the largest segment of the population in the 1980s (Weintraub 1979). Many people in this group are unlikely to subscribe to pay television when they can view appealing programs without paying directly. The networks, with sponsor and local station support, will be able to continue to generate profits, even if the audience shrinks slightly or remains stable. For example, the soap opera audience appears to have stabilized or possibly contracted in recent years as more women in the target audience enter the labor force (Cantor 1979). However, daytime serials continue to be profitable for the networks. Given the demographics of the available audience in the United States, even if half the homes in the country have pay television and others have home videotape or videodisc as well, the networks still will be able to attract enough people to make some dramatic television profitable.

The greatest changes resulting from adoption of the newer means of distribution will be in the production companies. These changes will mean more and varied kinds of production, although not necessarily less sensationalism, sex, or violence. The established and supported production companies and some producers may gain independence from the networks, but the chances for entry into production for newcomers will remain slim, as always. The television and movie industries have always attracted more people than are needed for the amount of work available. Production will continue to be concentrated in the hands of a few program suppliers. Although program suppliers may have more control, when they are dependent on others to finance and distribute their products, they almost always lose some creative freedom.

If one believes in cultural pluralism or that creative people should have freedom and autonomy, the prospects are dismal (Gans 1974; Cantor 1971, 1972). It is clear from the history of broadcasting and film making that cultural pluralism or availability of choice in culture through mass media is unlikely.[5] Diversity and pluralism appear to be available to only the well-to-do and the educated. Freedom to create films rests with those who have access to the means of dissemination and to the money necessary to finance a film. How the financiers and disseminators define the audience limits the freedom of the creators and essentially determines the kind of television content that has been and will be available.

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[5] The history of film production in the United States (including television) is partially the history of monopoly and concern over oligopolistic concentration of control reducing the diversity of media content. In the past, when the government has been successful in its antitrust suits, as it was in 1950, breaking the control that the big five movie companies had over production and distribution of movie productions, or when new technologies seem to break the control of one group, new monopolies have arisen to replace the old. With the adoption of cable and other forms of distribution, the power will probably concentrate once more in the production companies.

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Television drama is highly valued both as a marketable commodity and as a cultural form. Because of the high profits associated with successful films, the competition and struggle over access to the audience among the organizations and people who are responsible for these programs are key features of the commercial production process. Unless the exchange and struggle are understood, those who value television as a social and cultural product are unlikely to make an impact on the kinds of programs available. Because television entertainment programs must reach large audiences to be successful, sensational and violent topics are as likely to be selected in the future as they were in the past.

Appendix
Series—New and Old

A number of series are mentioned by name in this review. Some may be unfamiliar to the reader. Terrace (1976) describes most of them, but not in detail, and none that has been introduced since 1976.

During the last 10 years, hundreds of new series have been introduced on television. Of these new series, only a few have been successful. The definition of success is: a series which has 100 or more episodes completed and available for syndication. Among the series that have been repeated frequently in the last decade are:

I Love Lucy was first broadcast in 1951 and went off prime time as a first-run series in 1956. At that time, 39 episodes a year were being made. Therefore, there are several hundred episodes available for syndication; these have been rebroadcast continually since 1957. It is a situation comedy about marriage (Terrace 1976). Although there are series which have had a longer first run, *I Love Lucy* probably has been seen by more people in the United States than any other program because of its repeated showings. For example, this season (1980–81) the show is being broadcast on an independent station in Washington, D.C., and probably in other areas as well.

Star Trek (1966–69), a science fiction program, in contrast, was only on the air for 3 years in prime time (Terrace 1976), but during its short run, compared to other series named in this article, a devoted, although small, following (by network standards) developed (Whitfield and Roddenberry 1968). This following was unsuccessful in its try to keep the program on the air for continuation as a first-run series (Cantor 1971), but the series has been seen on syndication regularly since production stopped.

*M*A*S*H* premiered in the fall of 1972 and at this writing is still on the air as a first-run series. Although it is difficult to determine which series qualifies as the most popular, there is little doubt that *M*A*S*H* is among the top 10. The story of how medical men and a few women retain their sanity amid the insanity of war has appeal for the viewers. This show, a spinoff from the movie of the same name, takes place in the 4077th Mobile Army Surgical Hospital in Korea during the Korean War. Many of the characters have changed during the 8-year run, but Alan Alda, the star, and Loretta Swit, who plays the head nurse, are still appearing on the show. Without Alda, the program probably would not continue. (See Terrace 1976, for a list of the original cast.)

Although not emphasized in the body of this article, one innovation in recent years has been the evening serial dramas which differ from the usual episodic series. Serialized dramas with continuing stories from episode to episode enjoyed limited success in prime time until 1977. The only program before that time which had an extended run was *Peyton Place* (Sept. 1964 to January 1969, twice a week). These shows were never repeated (Terrace 1976; FCC 1980). With the introduction of *Soap* in 1977 and later *Dallas* in 1978 (the latter is still on the air), the prime time serialized drama has become more prevalent. For example, in the 1980–81 season, there are several additional shows with the serialized format on the air. This proliferation may indicate a new trend on prime time.

Another change in the 1970s was the introduction of miniseries.The miniseries is similar to the serialized drama mentioned above with one exception. The story continues for a short number of episodes, from four to eight. *Roots* (January 23–30, 1977) was adapted from Alex Haley's best selling novel about several generations of a black family in America. It drew the largest audience ever recorded to that time [85,000,000 people watched one or more episodes of *Roots* (Fireman 1977)]. Since then, an episode of *Dallas* in the fall of 1980 drew as large an audience, if not larger.

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